The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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50 Parys Moun., 9s. 20 Port Phillip, 11s. 3d. 25 Rookhope, 16s. 6d. 5 Richmond, £12 10s. 5 Roman Grav., £7¾. 10 St. Harmon, 35s. 10 Tankerville, £3¾. 15 Van, £20¾. 30 Van Consols, 9s. 20 W. Tankerville, 5s. 40 ditto Preference, 20s. 5 W. Wye Valley, £2½. 10 Wye Valley, £1½.

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40 Pandora. 12s. 50 Parys Mount., 9s. 9d. 35 Rookhope, 18s. 3d. 20 Richmond, £12 11s 3d 10 Roman Grav., £7¾. 5 South Condurrow. 15 Tankerville. 10 Van, £21¼. 15 Wye Valley. 20 Wheal Grenville, £3 50 W. Godolphin, 18s 25 West Tankerville, 7s. 5 West Chiverton.

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To Aberdaunant.
50 Argentine, 4s. 3d.
30 Bodidris, 25s.
25 Birdseye, 17s.
20 Blaen Caelan, £4 5s.
20 Cambrian, £2 3s. 9d.
70 Chontales, 10s. 9d.
20 Chapel House, £3 5s.
20 Colorado, £5 10s.
50 Court Grange, 20s.
75 Don Pedro, 10s. 6d.
5 D'Bresby Con., £8¾.
2 D'Bresby Moun., £80.
25 East Lovell, 7s.
25 East Van, £4.
20 Eberhardt, £6 10s.

50 Exchequer, 2s. 6d.
10 E. Caradon, 10s. (c p.)
25 Frontino, 1 18s. 9d.
40 Flagstaff, 12s. 6d.
25 Glenroy, 13s.
15 Gorsedd & Merl. £3¼
10 Grogwinion, £3 7s. 6d
25 Hingston, 7s.
30 Hultafall, £3 3s.
100 I.X.L., 2s. 6d.
20 Last Chance, £1 6s. 3d
20 Llanrwst, £3¼.
30 Morfadu, 12s. 6d.
40 N. Zea. Kapan., £1 1s.
20 Pandora, 12s. 6d.
25 Pateley Bridge, £3s 6d
100 Pestarena, 5s.

32 Plynlimmon, 3s.
60 Port Phillip, 10s. 9d.
20 Richmond, £12 10s.
30 Rookhope, 16s. 6d.
100 Rossa Grande, 2s. 3d.
40 So. de Bresby, £1 7s 6
10 Roman Grav., £7¾.
15 Tankerville, £3 6s. 3d.
5 Tecoma, 4s.
50 Tyn-y Fron.
5 Van, £20¾.
5 West Chiverton, £9¼.
20 W. Wye Vall., £2 11s.
20 Wh. Grenville, £2 13 9
25 W. Tankerville, 6s. 3d
200 Yorke Peninsula, 5s.

INVESTMENTS IN HOME MINES.

After the long and serious depression in almost every branch of Trade, and especially so in Metals and Minerals, the time may now be considered at hand when a revival of the general business of the country will set in. A demand for Iron, Copper, Tin, and Lead will, without doubt, spring up, and at no distant period be the first to have a great rebound in price. Now that a satisfactory solution of affairs, lately before the Berlin Congress, has been arrived at, activity in every branch of trade will, no doubt, shortly prevail.

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Roman Grav., £7½. Rookhope, 17s. 3d. South D'Eresby, 27s. 6d Tankerville, £3½. Van, £20½. United Mexican, £3½. Wye Valley, 31s 6d. West Wye Valley, £2½. West Chiverton, £9. General Credit. Native Guano. National Discount. Belfast Trams. Royal Aquarium.

Colorado, £5⅛. Chontales, 9s. 6d. Don Pedro, 10s. 9d. Eberhardt, £6¾. Flagstaff, 10s. 6d. Frontino, 37s. 6d. Hultafall, £3½. Javali, 7s. 6d. Last Chance, 22s. 6d. N. Zealand Kap., £7⅛. Pestarena, 4s. 9d. Port Phillip, 11s. 6d. Richmond, £12½.

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Established 1857.

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	Buyers.	Sellers.
Aberdaunant	3s.	6s.
Argentine	2s. 6d.	5s.
Bodidris	£ 1⅛	£ 1⅜
Colorado	5⅜	5⅝
Chontales	8s.	10s.
Clementina	1¼	1½
D'Eresby Consols	8	10
Denbighshire	1¼	1½
Devon Great Consols	2¼	2½
Don Pedro	10s.	11s.
Eberhardt	6¾	7
East Caradon	7s. 6d.	10s.
East Van	3¾	4
Flagstaff	12s.	14s.
Frontino	1¾	1⅞
Glenroy	12s.	14s.
Glyn	10s.	12s. 6d.
Gorsedd and Merllyn	3	3½
Grogwinion	3	3¼
Great Laxey	17½	18½
Hingston	7s.	9s.
Hultafall	3	3¼
I.X.L.	1s. 6d.	2s. 6d.
Last Chance	1	1¼

	Buyers.	Sellers.
Leadhills	£ 3	£ 3½
Mellanear	3½	4
New Quebrada	1½	1⅞
New Zealand Kapanga	¾	1
North Laxey	2s.	3s.
Parys Mountain	6s.	8s.
Pateley Bridge	¾	1
Penstruthal	3s.	5s.
Plynlimmon	2s. 6d.	3s. 6d.
Richmond	12¼	12½
Roman Gravels	7½	8
Rookhope	16s.	17s.
South Condurrow	11	11½
Tecoma	3s.	4s.
Tyn-y-Fron	1¼	1½
Tankerville	3	3¼
Tincroft	9	10
Van	20	22
West Chiverton	8	9
West Godolphin (call pd)	¾	⅞
West Wye Valley	2¼	2½
W. Grenville	2¾	3
Wye Valley	1¼	1½
Yorke Peninsula	2s. 6d.	5s.

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20 D'Eresby Consols, £10. 30 Gen. Credit, £7¾. 40 Hudson Bay, £12½. 50 Llanrwst. 20 Eberhardt, £7.

60 Ottoman Gas, £2¾. 20 Oriental Gas, £7¾. 25 National Dis., £11¾. 50 Mexican Rail., £1⅞. 10 Romrn Gravels, £7⅝.

30 Bombay Gas. 25 Royal Aquarium, £5⅛ 10 Van, £21. 75 Pandora. 40 Para Gas, £5¼.

"THE WEEK."—A SEPARATE EDITION from that which appears in the *Mining Journal* is published every Wednesday evening, containing "Notes and Hints on the Stock Markets," with Closing Prices. May be had on application.
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MESSRS. JONES AND HOUSTON, 25, CROSBY HALL CHAMBERS, BISHOPSGATE STREET WITHIN, LONDON, E.C

The following SHARES FOR SALE, free of commission:—

150 Aberduanant, 6s. 50 Bodidris, £1 8s. 100 Central Van, 15s. 20 Colorado, £5¼. 50 Chontales 11s. 20 Chapel House, £3. 15 Cardiff & Swan., 17s.

150 Don Pedro, 10s. 15 Eberhardt, £6 15s. 10 East Van, £4. 20 Frontino, £1 16s. 3d. 15 Glenroy, 14s 6d. 20 Grogwinion, £3 2s. 6d 5 Gt. Laxey, £18½. 20 Hultafall, £3 10s.

150 North Laxey, 2s. 9d. 50 Paut-y-Mwyn, £4 1 3 100 Parys Mount., 7s. 6d. 200 Penstruthal, 5s. 9d. 100 South Aurora, 3s. 9d. 50 Tyn y Fron, £1 12s 6d 10 Wheal Newton, £3¾

SPECIAL BUSINESS in Pant-y-Mwyn Lead Mining Shares, either as Buyers or Sellers. This mine is opening out very rich; the monthly returns have recently been trebled. The following is an extract from a private letter we have just received:—"Some of the most practical men from the Minera Mine have examined Pant-y-Mwyn, and consider it a superior mine to which Minera was, and likely to last out as long as that mine, for much of the lead is in solid veins, and the deeper it goes the richer and more plentiful it gets. As a proof of their faith the Minera men have taken shares in the company."
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80 Great Laxey. 100 Grogwinion. 200 Hultafall. 220 Ladywell. 100 Ditto Preference. 150 Leadhills. 200 Llanwrst. 25 Minera. 303 Pandora. 200 Pateley Bridge. 105 Red Rock. 100 Roman Gravels. 200 Rookhope.

80 South Cwmystwith. 100 Saint Harmon. 110 Tankerville. 20 Tincroft. 150 Tolgus Consols. 40 Van. 30 West Chiverton. 86 West Craven Moor. 200 West Pateley Bridge 120 West Tankerville. 100 Ditto Preference. 150 West Wye Valley. 100 Wye Valley.

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Shareholders wishing to sell Shares in above should forward us their instructions.

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110 North Laxey. 25 Pandora. 15 Parys Mount., 9s. 20 Pateley Bridge, £7⅛. 75 Penstruthal. 25 Roman Gravels, £7¾. 30 Rookhope, 18s. 60 South de Eresby. 10 Tankerville, £3¼. 15 Wheal Grenville, £3¼ 25 Chicago.

40 Chontales, 11s 3d. 25 Don Pedro, 12s. 45 Eberhardt, £7¼. 100 Flagstaff, 16s. 20 Frontino, £2. 35 Hultafall, £3½. 20 Javali. 75 Last hance, £1¼. 20 N. Zeald. Kap., £7⅛. 45 Port Phillip, 10s. 50 Richmond, £12½.

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The well-known mining engineer, Mr. Jehu Hitchins, one of the greatest authorities of the day, speaking of South de Eresby Mountain Mine, observes—"I am fully persuaded the lodes of the d'Eresby Consols and d'Eresby Mountain Mines run into and through your sett. * * * I regard this property as presenting a field for mining operations of more than ordinary character."

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Address, stating particulars and lowest price on rail or boat, to JOHN RAYBOULD, Esq., Planet Colliery, Kingswinford, Dudley.

WANTED, MACHINE FOR DRESSING LEAD ORE to dress from 100 tons to 200 tons per month.
Address, stating full particulars and price, to Mr. W. H. WATSON, Secretary, Peak Forest Mining Company, 71, Fargate, Sheffield.

WANTED, ONE HUNDRED PANT-Y-MWYN LEAD MINING SHARES, more or less. State lowest price for cash, ex or cum dividend, before Tuesday.
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100 New B ondfoyd. 150 Court Grange. 50 Blaen Caelan 3 D'Eresby Mountain. 10 D'Eresby Consols.

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50 Hultafall. 20 Hornechoe. 10 Aberllyn. 100 Van Consols. 50 Glenroy.

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Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,
Mining Engineer, Wakefield.
(Formerly Student at the Royal Bergakademie, Clausthal).
[The Author reserves the right of reproduction.]

SECTION V.

The publication of these Lectures is unavoidably suspended for two or three weeks. They will then be resumed and continued regularly.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergrath Dr. VON GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

COMPRESSED AIR IN MINES—No. II.

By M. G. JOHNSON,* of the Kingswood Collieries, Bristol.

Before, however, deciding definitely in the matter, we resolved to gather all the information available, and to see as far as practicable what others who were using this power were doing, and to ascertain their opinions. Mr. Cossham kindly took the North of England, and I took the South Wales district. Among the collieries visited by Mr. Cossham were included Ryhope and Shireoaks, and at each of these collieries compressed air is being used with excellent results. The same may be said of all the places I visited in South Wales—in one colliery no less than 40 horses had been dispensed with through the application of this power. Great credit is due to Sir George Elliot for the persistent efforts he has made and the money he has spent in order to bring as near perfection as possible the methods for obtaining this power. In the Powell's Duffryn Collieries, in South Wales, the proprietors are so convinced of the benefits to be derived from its use that they are dispensing altogether with animal power, and substituting air engines for their underground haulage; and the testimony of these collieries (Mr. Wilkinson, manager, and Mr. Snape, engineer) was to the effect that after ten years' experience in the use of compressed air they are fully convinced that there is no power equal to it for winning coal back to the shaft where steam cannot be conveniently employed, and where the coal lies to the dip. At New Tredegar Collieries, belonging to the same firm, this motor is, I am told, extensively employed. They have no coal works but what lie below 1500 yards to the dip, and from that distance down to 2000 yards, the lowest point reached at that time (two years ago), they were hauling 800 tons per day.

When the Mont Cenis Tunnel had to be driven the engineers, Messrs. Sommellier and Grattoni, at once recognised this power, and availed themselves of it, and but for this I have no doubt the completion of that grand engineering feat would have been retarded for at least five years. It not only served as the power for driving their rock drills, but it cleared away the smoke after blasting almost immediately, and enabled the men to resume work at the face of the heading without any unnecessary loss of time, and to get the debris at once cleared away. Every miner knows that the hanging of the smoke in the ordinary method very often keeps him away from the place of his work quite one-fifth of his time, so that this power not only permits much more work to be done, but admits of its being done in a healthy atmosphere instead of in a vitiated one. At Mont Cenis Tunnel, too, they got this power very cheaply at merely the cost of the machinery; a mountain stream running down near the mouth of the tunnel was utilised, and supplied the power for compressing the air. M. Derilley has published an elaborate and most valuable report on the work done at this tunnel, and much information is given therein respecting their method of compressing the air. Mr. Taylor, of Ryhope Colliery, in a paper read before the North of England Institute of Engineers some few years ago, enumerates some of the advantages resulting from the use of this power:—1. It is obviously of great importance to have a large power which can be applied to any purpose, and at any moment to any part of the mine.—2. Possessing this power is a mere question of detail to use means for working the coal and bringing it to the point from which it is to be led by the air engine, thus dispensing in a great measure with manual labour, both as regards hewing and putting the coals. —3. Compressed air at 40 lbs. pressure has been successfully tried at Ryhope for airing a stone drift, and he sums up the results as follows:—1 Economy as regards its application to any part of the mine.—2. Additional safety to the mine, inasmuch as there is more direct communication with and control over all parts.—3. Having a power so easy of application to any part of the mine, its use for all purposes where labour is concerned must necessarily follow.

M. Trasenter, professor of mining at the University of Liége, considers that great advantages must ensue from the use of this power for driving engines at high speed in the galleries or working places underground, through the freedom from heating and condensation, slight friction in the pipes, and the ventilation in the works; but while enumerating its advantages we must not fail to look fairly in the face what are considered to be the drawbacks to its general adoption. Mr. Trasenter says compressed air necessitates costly works, and if used without expansion it leads to a great loss of power owing to the necessity for conducting the air at the required pressure. In calculating the ratio of the energy expended in compressing the air to the useful work theoretically given out, Mr. Trasenter has laid down a simple and interesting formula. The work given out soon reaches a limit which cannot be exceeded, whatever may be the pressure of the air or the energy expended. The maximum of work given out (increasing the compression indefinitely, and without taking into consideration the elevation of temperature due to this compression) cannot exceed the energy given out by the volume of air caused by the piston of the blowing cylinder working with an effective pressure of one atmosphere, and he demonstrates the law, and goes on to say that the power which a cubic metre of air, compressed to a million atmospheres, is capable of yielding, without taking the rise of temperature into consideration, can never become double that which the same quantity of air, compressed to two atmospheres, is capable of yielding. Air compressed to four atmospheres will give out a power proportional to $(1-\frac{1}{4})$, or $\frac{3}{4}$, whereas to obtain a power equal to 1 a compression infinitely great is necessary. He gives a formula which expresses the ratio of the work done to the power expended, and these interesting formulas I shall be pleased to hand over to the students. This power is not a new discovery; Hero, of Alexandria, was in some measure acquainted with it, as well as with the knowledge of steam as a motive power. Hero's tutor, Clestibuis, is said to have discovered that air was compressible, and the pupil is credited with having written a book on pneumatics, showing that when air was compressed it decreased in volume, and expanded itself again when the pressure was removed. Experiments proving its "ponderability" were made in the 17th century by Galileo and Torricelli; about the same time, too, Guericke invented the air pump. Its chemical properties, however, did not engage much attention until another century had elapsed, when Black, Priestly, Laviosier, and others took up the subject, and great discoveries resulted from their labours. Papin, about the beginning of last century, had an idea of working an engine with air, generated by a water-wheel and compressing pump at a distance, but it was not brought into practice; and just 100 years before the Mont Cenis Tunnel was commenced one Isaac Wilkinson obtained a patent for a machine for compressing air very similar to the one employed at those works. It is generally known that when air or other elastic fluid is compressed, there is generated an amount of heat which is the exact equivalent of the force employed in the compression.

It may not be out of place here to give an extract from Professor Tyndall's valuable work, "Heat a Mode of Motion." He says—

Whenever friction is overcome (by compression or otherwise) heat is produced, and the heat produced is the exact measure of the force expended in overcoming the friction. The heat is simply the primitive force in another form, and if we wish to avoid this conversion we must abolish the friction. We put oil upon the surface of a bone, we grease a saw, and are careful to lubricate the axles of our railway carriages. What is the real meaning of these acts? Let us obtain general motions first, and aim at strict accuracy afterwards. It is the object of a railway engine driver to urge his train from one place to another; he wishes to employ the force of his steam: it is not his object or interest to allow any portion of that force to be converted into another form of force which would not promote the attainments of his object; he does not want his axles heated, and hence he avoids as much as possible expending his power in heating them—in fact, he obtained his power from heat, and it is not his object to reconvert by friction the force thus obtained into its primitive form. For every degree of temperature generated in his axles a definite amount would be withdrawn from the urging force of his engine. There is no absolute loss. Could we gather up all the heat generated by the friction, and could we apply it mechanically, we should by it be able to impart to the train the precise amount of speed which it had lost by the friction. Thus every one of those railway porters whom you see moving about with his can of yellow grease, and opening the little boxes which surround the carriage axles, is, without knowing it, illustrating a principle which forms the solder of Nature; he is unconsciously affirming both the convertibility and the indestructibility of force. All the force of our locomotives is derived from heat. When a station is approached —say, at the rate of 30 miles an hour—a brake is applied, and smoke and sparks issue from the wheels on which it presses. The train is brought to rest. How? Simply by converting the entire moving force which it possessed at the moment the brake was applied into heat.

* Read at the Bristol Mining School.

This heat in actual practice is to a very considerable extent lost by radiation from the receiver and pipes in use; and further, when this compressed air has fallen to the temperature it possessed prior to its being compressed, it has lost in cooling an exact equivalent of the power expended in compressing it. Where, then, is the power to perform work? This remains in the stored-up air in the reser voir, where it is held under considerable pressure, and when allowed to expand in a working cylinder its temperature then falls below that of the atmosphere, and thus developes the work demanded from it. In accomplishing this, however, there is a loss of about 30 to 40 per cent. in consequence of the temperature of expansion not being depressed in an equal proportion to the increase obtained during its compression; and hence when the air has done its work in the cylinder, and issues forth from the exhaust passage, it is exceedingly cold, being about 28½° Fahr, or 3½° below freezing point. This intense cold formed for a considerable time very serious objections in its practical use as an engine motor, through the formation of ice as the exhaust. Various methods have been resorted to to remedy this defect, but this is effectually accomplished by casting the cylinder so as to have the exhaust openings connected with the exhaust port vertically and open across the cylinder, so as to discharge the air downwards as well as upwards, and admit of a bar being passed through, if necessary, to chip off the ice. It would appear from the foregoing that the higher the air was pressed the greater would be the loss in the economic result; but in this there is a great difference of opinion, one party going in for slow speed and low pressures, not above three atmospheres, and another for high speed and high pressuree. It is a very common expression, and true, that circumstances alter cases, and so in my opinion it is in this the "battle of pressures."

I do not wish to be dogmatic in this matter. Douglas Jerrold once said that dogmatism was grown up puppyism; and I know, too, there is a proverb which says that a certain class of people the opposite to wise, rush in where angels fear to tread. Where the work, however, to be accomplished is of a temporary nature, such as tunnelling, deep well sinking or boring, high speeds and high pressures may be adopted with advantage, as it admits of smaller machines being used to do the desired amount of work, but where the power is required for the running of a colliery to extend over 20, 30, or 40 years, and the air to be carried to long distances for hauling, pumping, rock drilling, and coal cutting purposes, then I say put down a good compressing plant, with moderate speed, ordinary pressure of (say) three atmospheres, and plenty of margin. This is my view of the matter, and must be taken for what it is worth. An athlete, in running a hundred yards race, starts away at a very different speed to what the one does who is in for a mile race; it is the old fable of the hare and the tortoise.

Looking at the matter in this light, the Kingswood Coal and Iron Company ordered a pair of air compressors from Messrs. J. Fowler and Co., of Leeds, of the following dimensions:—The steam cylinders are 36 in. diameter, the air cylinders being 40 in. diameter, with a 5-ft. stroke. The air cylinders are immediately behind the steam cylinders, and fixed to the same bed plate; the piston is continuous, but so arranged that no part of the rod that works in the steam cylinder shall enter the air cylinders or even the stuffing box. The air cylinders are cast with square ends and flanges to attach flat plates vertically at the sides, thus forming a tank or receptacle for a complete jacketing of cold water, the object of the cold water being to keep the tempetature of the air as low as possible during compression, the top left open to allow of evaporation and radiation. The supply of cold water is kept up by a pipe at the under side, getting its supply from a reservoir at a higher level than the tops of the cylinders, and the heated water is passed off at an overflow pipe at the top, the inlet and outlet being regulated by taps. The air is forced into a receiver, which is nothing more than an ordinary egg-end boiler, 25 ft. long and 5 ft. in. diameter, fitted with stop valve and safety valves; the latter weighted to 45 lbs. per square inch. Steam is supplied at 40 lbs. per square inch, and the pressure of air stands at 45 lbs. per square inch; the steam is cut off at ¾ in. of the stroke; the fly wheel is 21 ft. diameter, and weighs about 24 tons. From the receiver towards the shaft an old boiler tube, 28 ft. long, 2 ft. 10 in. diameter, is utilised, and from this cast-iron pipes 8 in. diameter are carried down the shaft for 225 yards; at this depth, and in an opening in the side of the shaft, a pumping-engine is fixed and driven by the compressed air. This engine consists of a pair of air cylinders, 10 in. diameter and 2 ft. stroke, which drives a pair of rams 6 in. diameter, geared 5 to 1, with air pressure at 40 lbs., and delivers 160 gallons of water per minute 700 ft. high. The cut and out dimensions of this pump is 15 ft. long, 7 ft. 6 in. wide, and 6 ft. 3 in. high. These compressors and pump, made by Messrs. Fowler and Co., of Leeds, have given the most unqualified satisfaction. The air pressure at this point, more than 250 yards from compressors, stands at 2 lbs. higher than it does in the receiver at surface, and my experience is that the pressure increases about 1 lb. for every 100 yards of depth. We have tested this by changing guages; the same also has been observed by Mr. Snape, engineer, and Sir George Elliot, who has had more than 11 years experience with compressing machinery. I do not intend here to account for this, but merely state the fact. We have 7 in. pipes continued for the remaining 270 yards down to the bottom of the shaft, and for the present have a dead flange screwed on the end of the pipes, but we have already two pairs of hauling engines on order, and hope to have them at work in a few months—one pair for level haulage, the other for dip haulage. I anticipate, therefore, when we come to put the pressure guage on at the pit bottom, that the pressure there will register about 5 lbs. higher than at the surface receiver.

[*To be continued in next week's Journal.*]

BRISTOL MINING SCHOOL.—We extract the following respecting the Bristol School from a report of Mr. Thos. Cadman, Inspector of Mines, addressed to the Right Hon. R. A. Cross, M.P., H.M. Principal Secretary of State:—"I have pleasure in mentioning the Bristol School of Mines in my district, which offers great facilities. I fear in years gone by it was not sufficiently appreciated, nor indeed known, amongst the owners and agents. The institution was established, I believe, by Mr. Handel Cossham and the late Mr. Herbert Mackworth, in 1856, and for some years dependent to a great extent upon voluntary contributions, but as these gradually fell off there was very little done for some time, until the Trade School, with which it was connected, was placed by the Endowed School Commissioners under the management of the Colston Trust, which is practically a committee of the Guild of Merchant Venturers of Bristol, assisted by certain members of special qualifications. This trust at once recognised the importance of an efficient mining school, and determined to spare no reasonable expense in providing a good education for students of mine engineering in the West of England. The school is now meeting with much success. Besides the teachers of science attached to the institution, most of whom received their education at the Royal School of Mines of London and Dublin, many of the leading engineers in my district deliver most instructive lectures upon geology, mining, iron making, and other branches of science to the students; and the colliery proprietors in the immediate neighbourhood allow them to visit their mines for the purpose of study. The geology of Somersetshire is most interesting, and this is taken advantage of by excursions into the country. The students of the trade school are taught French and German and the usual subjects of an elementary school. From this they may pass into the mining school, where they receive instruction in mathematics, geometry, surveying, mechanics, geology, metallurgy, mineralogy, and mining, besides experimental physics and laboratory practice."

BRITISH SOCIETY OF MINING STUDENTS.

The third general meeting of the British Society of Mining Students was held in the Wood Memorial Hall of the North of England Institute of Mining and Mechanical Engineers, Newcastle-on-Tyne, which was placed at their disposal through the kindness of Mr. T. W. Bunning, the secretary of the Institute, on Saturday, July 13. Mr. Edgar P. Rathbone, F.G.S., president of the society, occupied the chair, and there was a much larger attendance of members than at any previous meeting.

The PRESIDENT, who was warmly received on rising, congratulated the members on the flourishing condition of the society, and observed that he hoped they would excuse him if he claimed an almost fatherly interest in its progress. The idea of the society had originated with him, he had fostered it through its infant stage, and now it had attained maturity he watched its success with an interest others could not be expected to feel. Absence from this country would prevent his offering himself for re-election and he thought the election of a president who had not been previously connected with the managing committee would be an advantage. In conclusion, he expressed his conviction that the society would continue to make progress in the future as it had done in the past, if only each individual member would recollect that on his personal energy the continued prosperity of the society depended.

Mr. E. F. MELLY (the secretary), having read the report for the year 1877-8, stated that the society was in a flourishing condition both in regard to the number of members and financially. Beginning the year with a balance of 6*l.* 6*s.*, they had ended with a balance of 14*l.*, and the numbers have increased from 60 to 124. During the year the Journal has been published each month with great regularity, and has comprised no less than 51 original papers.

The report and balance-sheet having been approved, the managing committee—Messrs. H. Palmer, E. F. Melly, A. Mirfin, and W. J. Lazenby—were unanimously re-elected, and Mr. G. B. Walker, F.G.S., and Mr. H. Palmer were respectively elected to the posts of president and vice-president. Mr. Ayton then read an interesting paper on "Chaudron's System of Sinking through Watery Strata." A vote of thanks to Mr. T. W. Bunning for placing the Wood Memorial Hall at their disposal for the meeting, and a vote of thanks to the President, brought the meeting to a close. Many of the members subsequently proceeded to the Whitburn new winning, where Chaudron's system is in operation for sinking the pits through the magnesian limestone.

The British Society of Mining Students was originated in August, 1876, by Mr. E. P. Rathbone, F.G.S., and five other gentlemen for the purpose of affording a medium for the interchange of professional information between gentlemen engaged in studying mining engineering. It was felt that the papers read before the great institutions did not cover precisely the ground which was necessary for the training of young men learning their profession. The kind of information required by them would be beneath the dignity of the larger societies, and it was, moreover, believed that the opportunity of writing papers, however modest in themselves, would be a most valuable incentive to the thorough investigation of the subject treated upon. The society was in fact intended to qualify its members to participate in the proceedings of the older institutes as they outgrew its limits, and felt disposed to venture into deeper waters. The first proceedings of the society were of the most modest description. A nucleus of some 20 students was formed, and the title of "Criterion" was attached to the papers printed by papyrograph, a number of 20 to 30 pages being published each month by three or four of the number. It was not long, however, before it became evident that the idea of having a society amongst themselves was welcome to very many mining students besides those with whom the idea originated. The demands upon the papyrograph soon exceeded its powers, and lithography was substituted, which is in its turn destined to give way to letter press. The society has throughout received the warm support of many of the most eminent mining engineers in the country. We believe it is destined to achieve a great and independent position, and to accomplish a noble work. If it is followed up as it has been begun it will be the training ground from which many of the mining engineers of the future will spring, and in bringing the present notice to a close we can only advise the members of the society to bear in mind the words which their president so aptly quoted from Longfellow in his address—"Let us then be up and doing, with a heart for any fate; still achieving, still pursuing, learn to labour and to wait."

NORTH WALES CARRIAGE AND WAGON COMPANY.

The profitable nature of the railway carriage and wagon building business has been the subject of remark for many years, and more than a dozen companies of this class could be mentioned which have regularly paid dividends varying from 9 to 20 per cent. per annum. With a view to participate in these attractive profits the NORTH WALES CARRIAGE AND WAGON COMPANY has been formed, with a capital of 150,000*l.*, in shares of 10*l.* each, to purchase for 50,000*l.* (of which three-fifths is payable in cash and the remainder in fully paid shares) the property and plant, with the exception of the loose stock, which is to be taken at a valuation. The works are substantially erected on three acres of land, held under lease for an unexpired term of 27 years, at the very low rental of 75*l.* per annum, and are situated in a most eligible position, in the centre of the North Wales coal field, on the London and North-Western system, at Padeswood, near Mold, and are only five miles distant from the port of Connah's Quay, and ten miles from Chester. Negociations are pending for the purchase of the freehold, and it is confidently believed that it can be obtained for the company at a very moderate sum. It is intended further to develope the works by adding thereto a foundry, enabling them to manufacture at the works their own castings, wheels, and axles, all the necessary machinery for these purposes being already at the works, and they will also complete the other erections now in progress. All the machinery is of the very best description, and has been manufactured by the best firms in Glasgow, Lancashire, and London.

But in all enterprises of this character it is of paramount importance to be within easy reach of the markets, and in this respect the proximity of a shipping port and a point on the chief railway system of the kingdom places the company in an exceptional position. The works, from which there is communication to all parts of the United Kingdom, are of the newest construction, and have been built on the most scientific principles to reduce labour to a minimum. They comprise smiths'shops, forge fitting shops, wagon shops, sheds, lathes for wheel and axle turning, bolt and nut machines, steam hammers, boring and drilling machines, punching and shearing machines, steam-engines and boilers, &c., with suitable offices and stores, and railway sidings throughout the works, and are capable of turning out 40 wagons per week. There are also 10 repair depôts, situated at principal traffic centres for repairing wagons, and which the company intend further to extend, as the profits on repairs are very large. The company will have the advantage of all contracts on hand, and become possessed of a property rarely to be acquired, and for facilities and position second to none in the kingdom.

The company takes over a going concern and a valuable connection, and anticipate an additional 8 or 10 per cent. profit from financing their own stock. The works are capable of turning out 40 wagons per week, but for the sake of estimating profits an output of 20 wagons per week only is relied on, which will yield a profit of about 5000*l.* per annum, and in addition thereto, by financing their own wagons, as the company intend to do, a further profit

of 8 per cent. will be made with full security on the wagons. The vendors' shares are to receive no dividend for the first five years unless a dividend of 10 per cent. has been paid on the ordinary shares, after which date all the shares will rank *pari passu*. The company will enter largely into the letting of wagons, which is very remunerative, and is a constant source of revenue, and they will also take over from the vendors the 120 wagons at present let out on hire. They will be in a position to begin at once to earn dividends, which it is anticipated will increase from year to year as their rolling stock becomes larger. The prospectus will be found in another column.

ROCK-BORING MACHINERY.

An admirable sketch of the history and characteristics of rock-boring machinery is given in an interesting pamphlet by Mr. RICHARD SCHRAM,* whose own invention for a rock-drill was referred to in the *Mining Journal* a few weeks since. He remarked that during recent years the success attending the introduction of rock-boring machines for accomplishing various engineering works had induced many to decide upon substituting machine work for hand labour in drilling for the purpose of blasting in mining and excavating operations. Some difficulties have been encountered in selecting a machine precisely suited for the particular work in hand, and thus a certain prejudice against the use of these machines in general has not unnaturally been created. Nevertheless, in order to comply with modern requirements as regards economy and speed, there can be no doubt that but little time will elapse before all important mining, tunnelling, and sewering works involving blasting operations must be carried out by the aid of machinery.

Referring to the causes which have led to rock-boring machines not having proved wholly successful, Mr. Schram is of opinion that it will be found upon enquiry that it is because their practical working has not been properly understood. Experience teaches us, he remarks, that in the employment of rock-boring machines it is as essential that the whole system of operations be sound and well planned as that the machines themselves be effective and simple, so as not to require much or frequent repairing. Upon the first introduction of rock-boring machines old experienced miners were employed, and it was quite natural that they should endeavour to give the holes such directions, and proceed generally as nearly as possible in the same manner, as they had been accustomed to do in hand boring. If, however, we glance at the progress of any other branch of industry, we shall find that a more systematic method of working has invariably been the consequence of the introduction of machinery, and that to the improved organisation and regularity thus accruing must be attributed no inconsiderable part of the great and manifold advantages of all machine work over hand labour. Rock-boring by machinery forms no exception to the industries obeying this general law of progress, and upon its introduction rational systematic methods of working must be adopted. At the present time there is scarcely any branch of industry in which machinery does not play an important part. In some branches the mechanical appliances are so perfect that it would be impossible now to dispense with them; in others, on the contrary, the machines may be said to be in their infancy. To this last category rock boring has hitherto belonged.

The idea of using machinery in rock-drilling was, Mr. Schram tells us, entertained long ago. In 1844 Burton, an Englishman, suggested the idea of employing compressed air to work a hammer striking upon a drill, but no practical support was given to the suggestion; and it was in the year 1854 that Bartlett, also an Englishmen, and in 1855 that Schumann, of Freiberg, first appeared before the public with practical experiments; from these dates down to the present time improvements and developments in rock-boring machinery have succeeded one another with great rapidity. Mr. Schram ranges the existing rock-boring machines into five classes—the ram system, embracing the Schwarzkopff and Warsop drills; the lever system, embracing Schumann's, Burleigh's, Sach's, McKean's, Warrington's, Ingersoll's, Dunn's, Roanhead, Cranston, Barrow, and many other machines; the duplex system, embracing the machines of Sommeiller and Ferroux; the rotary system, embracing the Diamond drill, Brandt's, &c.; and the direct-acting system, including Darlington's, Schram's, and Reynolds, without slide, and Osterkamp's, Schram's, Cederblom's, and others with slides. Discussing the merits of the several systems, Mr. Schram remarks that the ram system as applied to rock-boring machines must prove impracticable, and must be so apparent to everyone who has seen a worn-out hammer and hand drill that it is unnecessary to give it any consideration. The lever system has, he says, long kept its place, and several machines constructed upon this system have done very good service, but he considers the disadvantages of the system are the great wear and tear to which the machines must be exposed, and the unpreventible loss of power, results which he regards as inseparable from a mode in which levers or tappets are actuated by the piston.

The duplex system has, Mr. Schram states, only been employed in places where compressed air has been cheap and plentiful, as in Mount Cenis and St. Gothard Tunnels, but in either of these places machines of a later invention would have been found to work both better and more economically. By employing a separate engine to work the slide the piston, which carries the cutting tool, runs perfectly freely, and as these pistons are made of a large diameter and have a long stroke the machines are, consequently, very powerful. But in proportion to their great consumption of compressed air (first in the subsidiary engine and again in the main cylinder) they prove very expensive in working. Moreover, in consequence of the great length of the machines, the holes must all be bored in a nearly horizontal position, thereby necessitating the use of a greater amount of explosive for blasting than would otherwise be necessary. The rotary system, as carried out for blasting operations, has likewise met with very limited approval. It is true that Lisbeth's rotary hand drill, as improved by Macdermott, works admirably in coal and soft slate, and no doubt the employment of these machines in coal mines is already extensive, and is rapidly spreading, but they are by no means adapted for the harder varieties of rock. Mr. Schram admits that for prospecting purposes the diamond drill is no doubt extremely valuable. One of the advantages held out in favour of rotary rock drills is that they are incessantly working into the stone, a condition evidently incompatible with any percussive action; but, on the other hand, the force of each blow of a percussion machine is very much greater than the force which in a rotary machine is constantly exerted. Moreover, the constant resistance to which the tool of a rotary drill is subjected necessitates a greater motive power, and, after all, the actual work done is less than that of a percussion machine.

An interesting trial of a rotary rock-boring machine invented by Brandt was made in 1877 in the Sonnenwendstein Tunnel, on Ebensee, in Austria. On the shore of the lake Ebensee an engine-house was built, in which was erected a steam-engine with two steam cylinders, each 24 centimeters in diameter. Water under a very high pressure (stated to be 70 atmospheres) was carried in strong wrought-iron tubes into the tunnel, where it worked the rock-boring machines. These consisted of two auxiliary cylinders, acting upon a crank-shaft laid at right angles across the drill, and a worm cut in the middle of this shaft caused the drill to rotate. The central part of the machine formed a cylinder, in which was fitted a plunger piston attached to a joint, by means of which the machine was connected with a very strong stretcher or standard. Water being admitted to this cylinder, and exerting its force against the plunger, pressed the whole machine forward towards the rock, and thus maintained an enormous pressure on the cutting tool as it rotated. In the extreme end of the drill, which was hollow, there was a steel crown furnished with teeth, which, through the rotary motion and the great force with which the apparatus was pressed against the rock, cut the stone in a similar manner to the Diamond drill; water was employed to clear out the debris from the holes. The drill made 30 revolutions per minute, and, boring holes of 7·5 centimeters diameter, it progressed at the rate of 3 centimeters per minute. The rock was dolomite. As great difficulty was experienced in commencing the holes they were bored double their required depth—that is to say, double the depth at which the explosive proved to be effective, and before being charged and fired were filled up for half their depth with sand. After the first charges were fired the sand was removed from the remainder of the holes, which were then charged and fired again. The heavy expenses of working proved too great for the general adoption of this machine in other places.

As belonging to the direct-acting system without slides, Mr. Schram has mentioned the Darlington, Reynold, and Schram machines. Simple as this system is it is, he says, nevertheless, unpractical, because the piston being propelled by expansion the pressure is, consequently, least when it ought to be greatest—*i.e.*, at the end of each stroke. Another defect is that pressure is exerted on the lower side of the piston during the forward stroke, thereby counteracting the force of each blow to a most injurious degree. The Darlington machine especially requires twice the quantity of compressed air necessary for most other machines of the same size, notwithstanding which the effect in boring horizontal holes is over 100 per cent. less than in the case of machines of more modern construction. He describes one of his own machines of this class, but remarks that this system, simple as it is, is by no means practicable, as though the machine will run at an extraordinary high speed the boring results, as compared with the direct-acting machines with slide, are not satisfactory.

In the class of direct acting machines with slides, are those by Osterkamp, Dœring, Schram, Cederblom, and others; and he here describes his own arrangement, which has certainly much to recommend it. The only moving parts of the machine are—the main piston, the slide piston and slide, and the rotating movement with its piston. It is an important feature in this machine that the slide rod is made in the form of a double spindle valve; by this method of construction it remains in position without any recoil until the piston has made the greater part of its stroke. As in some varieties of rock it happens that the drill often sticks fast, there is a reversing rod to suddenly reverse the slide, and thus pull the drill out of the hole. With careless workmen it would frequently happen that the piston would strike against the lower cylinder cover, therefore there is an air cushion at the lower end of the cylinder. In addition to this there are an iron ring and an india-rubber washer (exchanged for one of wrought-iron when steam is used), with the object of moderating the violence of the shock such blows, inadvertently permitted, would cause. In order that the hole drilled be perfectly round it is necessary that the cutting tool should partially rotate at each backward stroke so that its cutting edge shall every time strike the rock in a fresh place; but in order not to lose any power it must always make its forward stroke without rotating. For this purpose a twisted bar is employed, connected with a grooved disc, and a brake acted upon by a small piston. Communicating from the slide box with the cylinder is a small port, by means of which the compressed air exerts a constant pressure upon the upper end of the small piston. When the main piston makes its backward stroke the back end of the cylinder is in communication with the outlet, and consequently there is no pressure on the lower end of the small piston. The constant pressure on the upper end of this piston, therefore, now presses it upon the brake which presses upon the disc, preventing it from turning, and thus the main piston is forced to partially rotate round the twisted bar secured to the disc. But when the main piston makes its forward stroke, and steam or compressed air fills the back end of the cylinder, the motive fluid enters through small ports and presses on the lower end of the small piston, thus counterbalancing the constant pressure on the upper end. There being now no pressure on the brake the disc is free to rotate, and the main piston makes its forward stroke without rotating, partially turning the disc as it proceeds by means of the twisted bar. This machine is sometimes made with an automatic feed motion actuated directly by means of a piston, instead of, as in other rock-boring machines, through levers, but the inventor, nevertheless, recommends in all cases a manual feed, as, notwithstanding all the assertions to the contrary of eager rock-boring machine dealers, practical miners know that in some faulty rock the drill will and must occasionally stick fast. When this happens it takes much longer time to clear the cutting tool if an automatic feed is in use, than in simply giving the handle of a manual feed a turn or two, which is all that is necessary to loosen the drill and permit of the boring being proceeded with. Moreover, the workmen are never so attentive to their work when they have nothing to do but to look on, as they are when they have the machine constantly under hand. Thus, apart from the increased complication and greater wear and tear to which even the best automatic feed motion renders any machine liable, such a feed has always been found objectionable in actual practice.

Through the perfectly free action of the main piston, and because the motive fluid is admitted to the whole surface of its upper end, each blow is extremely powerful; moreover this free action, combined with that of the slide piston, allows the machine to be run at a very high speed and enables it to be worked with a very low pressure. Its principal feature, however, is its remarkably small consumption of compressed air, as an air compressor which would only be able to drive one machine constructed on the lever system will easily drive two of Schram's, the diameter of cylinder being the same in both cases. There being no parts exposed to blows and the principal parts being directly actuated by the motive fluid, this machine is less liable to wear and tear than those of other systems. It should also be observed that the working parts are all inside the cylinders, so that rough-handed miners, unaccustomed to use more fragile instruments than sledge hammers and picks, may be safely entrusted with the handling of these rock drills. Reverting for one moment to the slide action, it may be mentioned that this machine was at first constructed with a cylindrical slide; but considering the leakage of motive fluid caused by wear and tear which has always been found to result from the employment of this form of slide in steam engines, the inventor has considered it most practical to adopt the old form of D slide, which has this great advantage, that even after years of work it always fits perfectly tight on to the slide face.

The supports and various other details connected with machine drilling are referred to at equal length, but as these will constantly vary with the work in hand an abstract of Mr. Schram's remarks would be of little value; the book itself, which is really worthy of careful reading by all practical men, must be referred to for further information on the subject.

* "The Application of Machine Power in Rock Drilling." By RICHARD SCHRAM. London: G. Hill, Westminster Bridge-road.

ROTARY STEAM ENGINES.—Mr. D. F. UNDERWOOD, of Nottingham, proposes to employ a circular ring-shaped chamber, which also forms part of or is bolted to a suitable foundation; the chamber is provided with inlet and outlet ports, and a sliding valve or valves, each moved from the centre outwards by a cam or cams carried by a central shaft revolving in suitable bearings. Upon this shaft is keyed a plate, the periphery of which slides steam-tight in a slit round the whole of the inner circumference of the circular chamber. The plate also carries one or more pistons which traverse the circular chamber. The revolving shaft is also provided with a fly wheel and suitable pulleys.

VALVES AND VALVE SEATS.—A peculiar form of valve and valve seat more particularly applicable as the steam valve of pulsometers and apparatus of that class, and to pumps, has been invented by Mr. M. HECKING, of Dortmund, Westphalia; it consists in making the valve conical or in the form of a frustum of a cone, rounded at its smaller end, the said valve resting upon its apex or rounded end in the hollow of a valve seat, consisting of two halves of a hollow cone or frustum of a cone, joined on the two opposite sides by a short length of straight, in horizontal section, the said straight portion tapering from the top or lip of the valve seat down to nothing at the lowest part thereof. Within this seat the said valve is free to vibrate laterally to and fro in one direction, so as to open and close alternately two orifices made one in each of the two opposite sides of the seat which are farthest apart, such orifices communicating respectively with the chambers of the pulsometer, or with the suction and discharge passages of a pump, or other like apparatus to which the said improved valve and valve seat may be applied. In cases where the pressure would so act as to tend to lift the valve from its seat, a spring or other well-known contrivance may be applied to the valve for the purpose of preventing its undue displacement. For the facility of removing the said valve when required, a tapped hole may be made in the larger end thereof for the temporary introduction of the screwed end of a lifting rod or spindle.

THE INDUSTRY OF CORNISH MINERS.

Some important observations bearing upon the position and prospects of tin mining in Cornwall, and pointing to the probable causes of the diminution of profits, were made at the Wheal Owles meeting recently held. The energetic purser, Captain R. Boyns, does not yet despair, but he does not fail to appreciate the difficulties with which those interested in Cornish tin mining have to contend. He felt for the time being beaten by the foreign producer, yet he had not the slightest doubt that the price of tin would mend, although when that wished-for change would take place involved a question which he feared to answer. The importation of the Chinese into Queensland was the feature he most dreaded, for Chinamen could work on 1s. 6d. a day, and would take 1s. rather than lose a job. Still, one fact was favourable to Cornish mining—the product from Queensland was 1000 tons less in the past year than in the previous, and that notwithstanding there were three times as many men turning over the surface. That must tell in the long run; three times as many were turning over the soil for alluvial tin irrespective of the Chinese, whose labour had not yet told on the market. It was evident that the supply from Queensland would give out unless they found lodes. Some said they had, but very few believed lodes existed in either Queensland or Tasmania. He had not the slightest doubt that tin would rise to something like a fair average. To sell 80 tons of tin for 2800*l.* was simply contemptible. It was not the price of potatoes; but he hoped the change would soon come. The Mining Institute had recently paid a visit to the mine, and he found very few of them knew anything about mining at the time he first became connected with Wheal Owles, which was now 44 years ago. That was a long time to be connected with one mine, and from the beginning he had plenty of hard work. There was a time when he could say that he would not exchange his position with any man in England, but he hardly felt like that now. The depression had come upon them very severely; the old mine was not so good, and had fallen off seriously since the last account. Still, he was not without hope that before the special meeting they would cut a new lode.

But whilst it is acknowledged that the depression and foreign production have had much to do in augmenting the difficulty of making Cornish mines yield profits to the adventurers it appears that these are not the sole causes. One of the gentlemen present remarked that in travelling about he found the depression in tin was simply in accord with that which prevailed among the principal staples of the world—wool, cotton, and iron. The depression generally was unprecedented for at least 30 or 40 years, and it would have been extraordinary if Cornwall had been better off in this respect than the manufacturing districts of the country. Consequently, he saw nothing in the depression of mining but an echo of the depression everywhere else. Still, he was inclined to believe that the *coup de main* of the Earl of Beaconsfield, which has placed England in a position never surpassed during the century, and made Europe respect her for taking up the cudgels on behalf of civilisation, would result in a speedy improvement of trade and commerce. Every day they were improving in civilisation, and continually developing new uses for metal, which was a necessary element of most materials in the present day. Consequently, although so much was said respecting discoveries in Tasmania, he did not think they would affect Cornwall very much, especially if boring-machines and other appliances were used for getting the tin out of the ground and placing it in the market in the cheapest and quickest manner; if this were done he believed Cornwall would be able to compete with the rest of the world. And he felt bound to say, having seen labour all over the world, labour in Cornwall was not what it should be. Although it was sacrilege to talk of such a thing in Cornwall, he really thought the miner might do more for the wage, and to be successful there must be economy, system, and getting as much labour out of the men as was fair. All these these things must be taken into full consideration by everyone bringing about a general improvement. The general intelligence of the Cornish miner, as well as his scientific ability—which in some cases amounted to intuition—in finding material in the ground was not to be supassed. He was found all the world over, and wherever found was respected and liked, and abroad would work at least twice as hard as he did in his own county. Why this should be so he did not know, but that was the result of his experience. There was no doubt Cornish mining would change for the better; prices had now reached their minimum, and must rise. He believed there was a great deal of exaggeration respecting the tin discoveries in Tasmania and Queensland, and other places. Of course, it was to the interest of some to exaggerate these things as much as possible. Most of the tin in Tasmania and Queensland has been heaved out by late volcanic action, and deposited in gulleys and pockets, and he had yet to learn of any actual lodes in these countries.

It is probably to be regretted that so many of the Cornishmen and their friends not only profess to ignore but propogate erroneous statements concerning the extent and probable permanence of the tin fields of Australia and Tasmania. It would be far wiser were they to recollect that the fact of Queensland having been able (notwithstanding the exceedingly low price of tin and the newness of the industry to the colonists) to maintain her production so nearly may be taken as an indisputable evidence of the stability of the basis on which the Australian tin trade has been established. Already the "Kangaroo" is acknowledged to be in every respect equal to the "Lamb and Flag" brand; so that Cornishmen must be prepared to send Cornish tin into the markets at the lowest price at which Kangaroo tin can be produced without loss. Now, as a matter of fact, the Australians and Tasmanians are at present working without loss, although the low prices which have prevailed have of necessity seriously diminished their profits, and unless Cornishmen be prepared to let Cornwall cease to be a mining district, to let it be known to history only, they must both work harder, and progress with the times in adopting improved machinery, and applying the same amount of scientific knowledge that is applied elsewhere. Every miner must be content to be paid for the work which he actually performs, and as the extravagance of ticketing dinners and counthouse gatherings has been to a great extent abolished, so miners must learn that with tin at 35*l.* or 40*l.* per ton adventurers cannot afford to pay a man for smoking his pipe or helping his industrious comrade to do nothing. The facilities which Cornwall possesses in the shape of cheap fuel and cheap machinery, owing to its proximity to the chief places of production, fully compensate for any advantages which Chinese labour may give to others, but both mine agents and miners must aid in making the mines profitable, or the adventurers' willingness to supply the necessary wages fund will cease.

This all-important question of diminished industry on the part of the miners was also fully referred to by Mr. Goffin, the agent of the Diamond Rock-Boring Company at Carn Brea, who said he could quite confirm the statement that Cornishmen did twice as much work out of their own county as in it. He had proved this in one case. Some years ago he took a miner from Tincroft to North Wales, and there he did capitally well, abiding by the rule of doing a certain amount of work in a certain time. Afterwards he brought him back to Cornwall, and allowed him to pick his men to bore with the machine, blast, and take away ground 3 ft. by 8 ft. in three hours, as was done every day out of Cornwall. At first it was done, and then gradually the time was lengthened. When they took seven and half hours about it, he went down and swept the whole lot out. Another gang put in did the work in two hours and three quarters, and never exceeded three and a half hours. The practice was to bore eight or ten holes, and blast them at once; and with the compressed air there was no need to wait till the smoke had cleared away. But when this man would go in directly to clear away, his comrades would say "Stop and have a touch o' pipe; doesn't want to kill theself; when they've done

weeth'e, they wont care." The man was a good man himself, but had been spoiled by others, and this would go on as as long as men were paid the same whether they did their work in two or ten hours. Doubtless there was great depression in mining, but he hoped to see all smiling yet in Cornwall. When first he came into the county people said it was impossible to get a machine to bore the hard rocks of Cornwall, but they had underrated the borer, and he employment of these machines, steam-stamps, and improvements in tin dressing would, he believed, enable them to compete with foreign countries. Mr. Doering, who spent 9000*l.* and left a little money behind in Cornwall, ought to have a monument raised to him as high as that at Carn Brea, as the inventor and introducer of a rock-boring machine into the county, for, although his borer was not a success, still it laid the foundations for success. There was still plenty of room for improvement in the machines, which were now on the high road to perfection. Mine agents often asked him, "Can you drive a fathom of ground cheaper than by hand?" His answer was, "No; but if boring machinery was introduced into a mine to drive two or three levels and sink one or more shafts, then the mine could be worked cheaper than by hand." It stood to reason that it would not pay to put down compressors and boring machinery to drive one level. Such remarks as these of Mr Goffin are practically unanswerable, and the attempt to explain it by saying that it is to be accounted for by old habits of labour, low wages, and a corresponding low diet, and by an enervating climate is simply absurd, since it is the absence of the old habits of labour that is deplored; the Cornish miner's diet is better than it was 40 years ago, and the climate is not more enervating than formerly, but positively much less enervating than it is in many countries where the industry of the Cornishman leaves nothing to be desired.

Meetings of Public Companies.

MINERAL CORPORATION OF GREAT BRITAIN.

The first general meeting of shareholders was held at the company's offices, Finch-lane, on Tuesday,

Mr. EUGENE FEILLET (Managing Director of the Comptoir Général des Valeurs Charbonnières) in the chair.

Mr. H. E. VICKERS (the secretary) read the notice convening the meeting, and the meeting was declared duly constituted.

The CHAIRMAN remarked that this being only the statutory meeting of the company their proceedings would necessarily be of a somewhat formal character, but he might congratulate them upon being able to announce that their capital was being well taken up in France, and that it was intended to commence operations at once in the Llanrwst district. The Hafna Mine, adjoining D'Eresby Mountain, High Hafna, extending between Hafna and Pandora, and Bryn Canadon Mine, situated at the foot of Lake Geirionydd, and to the north of Pandora, are the first mines in this district to be worked by the company, who intend to introduce in the district steam-boring, and for this purpose two of Dunn's rock-drills will be immediately erected and set to work in Hafna. D'Eresby Mountain (the success of which the readers of the *Mining Journal* are aware of) was started for the primary object of cutting the Hafna lode (an east and west one) in the former mine. The lode is described as a fine large one, and in Hafna, where many thousands of pounds worth of lead has been raised and sold, is yielding well. With regard to the future management of the corporation he was glad to be able to inform them that Mr. J. W. Williamson, barrister, of Lincoln's Inn, and Col. Perceval, of the Chontales Mining Company, had joined the board of direction, so that the shareholders would now have the advantage of the advice of gentlemen of practical acquaintance with English mining companies, as well as of French directors who had devoted themselves to scientific engineering and financial affairs.

A SHAREHOLDER enquired what arrangements had been made for the resident local managership, as he considered the success of every mining undertaking was dependent to a considerable extent upon the ability and judgment of those who had the immediate control of the mines.

Mr FEILLET said that the board had not been neglectful in a matter of such importance, as the shareholders would at once admit when he told them that Capt. W. Bennetts, of D'Eresby Mountain and D'Eresby Consols Mines, had been entrusted with the local management of this company's mines, and that Capt. Bennetts had resigned his appointment with the former companies in order to devote his entire attention to the works of the Mineral Corporation in the Llanrwst district. A full report upon the mines and works at Hafna would very shortly be laid before the shareholders.

It was subsequently announced that Mr. Alphonse Outters, one of the founders of the company, and Councillor-General for the Department du Nord—a most influential and important position in France—was appointed the legal representative of the company for France and Belgium.

One or two formal resolutions having been passed, thanks were voted to the Chairman for presiding, and the proceedings terminated.

THE LOVELL MINING COMPANY.

A meeting of the shareholders was held at the office of the company, No. 2, Gresham Buildings, on Thursday,

Mr. J. L. GODDARD in the chair,

Mr. GRANVILLE SHARP (the secretary) read the notice convening the meeting and the minutes of the last meeting, which were confirmed. The statement of accounts which had been issued with the notice convening the meeting was, on a proposition from the chairman, taken as read. The agent's report was read, as follows:—

July 18.—I beg to hand you the following report of all our operations underground and at surface for the last six months. Shortly after the last general meeting, held in January, it became apparent that the timbering, casing, and dividing, and putting in perfect order the Hownan shaft for pumping from the bottom of the mine, and for the general discharge of all our stuff, became imperative for the more economical development of the mine. In the last six months this shaft has been cased and divided from surface to the 40, footway put in, and pump work fixed from the 40 to the 36. In addition to this great outlay for putting the shaft into order for pumping and winding, a great amount of work has been done at and near the surface. I mentioned in my last report for the meeting that the mouth of this shaft was a large open excavation, made 100 years since by the ancient tinners; consequently we had to use large and strong timber, and to cart a great amount of stuff to make it the required size. This shaft has been sunk below the 40 about 6 fms. 3 ft.; but when a little below the level we discovered that the main part of ore ground had taken another dip eastward, and at such an angle that it would be impracticable to attempt to turn the main shaft in the same direction; we are, however, inclining east about 3 ft. 6 in., but we regret to say the last 4 fms. sinking has been in solid granite, which has seriously affected our returns, especially as in the latter part of last year 4 tons per month was raised from this point alone; present price for sinking, 28*l.* per fathom, and is being worked by nine men. The 40 has been driven east of Hownan shaft 11 fms 1 ft. 2 in through a lode averaging 9 ft. wide, and in places has produced some good assays, but on the whole has been rather deceptive, and not produced so well as we expected; the lode at present in the end is 5 ft wide, but low in quality, driving by six men, at 18*l.* per fathom. Knowing the peculiarity of the mine, we sunk in the bottom of this level last month 3 ft to prove if this large lode goes down. I am pleased to say it does go down very strong and masterly, and from its appearance I have every confidence of its again being rich in the next level. A winze has been sunk from the 36 and communicated with the 40; this has laid open stoping ground. Driving to the low price for tin, all stoping is suspended except six men, who are stoping in the back of the 12 west of engine-shaft on a lode 12 ft. wide, worth 12*l.* per fathom.

Eastern Sett: A 12-horse power portable engine has been purchased and put to work on this part of the mine. The engine-shaft here is on the course of the lode from surface, and is down nearly 7 fms. below; the lode is 2 ft. wide, and for so small a depth its appearance is excellent. It is now producing a little tin of good quality, but not sufficient to stamp. The ground is moderately easy for working, and quite of a congenial character for producing tin in paying quantities as soon as fair depth is attained. During the next ten weeks we expect to be a sufficient depth to commence driving east and west and open up this part of the mine, which will be done with great dispatch, as the ground is easy and inexpensive for working. I regret that the returns have been so small, which is in a great measure accounted for by the falling off of the rich lode at the shaft shortly after your last meeting, and the 40 end, although at times it has shown signs of richness, has been deceptive. The heavy debit balance has been augmented by the timbering of the Hownan shaft from surface to the 40, putting up horse-whim and shaft tackle, and purchasing portable engine for new sett, which in all amounts to nearly 300*l.* I beg to inform the shareholders that the mines of this district are subject to such sudden changes as we have had in Lovell in the last six months. I have known a case, in the richest mine in all the district (East Lovell), when a rich course of ore similar to what we had at our shaft was cut off in the end at once, and 10 fms. had to be driven before it was found; this was in the 40, about the same depth as we now are, and afterwards made all its riches. I have great confidence that in going east in the 40, and in the next level, we shall have great improvements, especially as the geological position is all that can be desired. I should recommend the cost to be kept as low as possible for the present—say, 150*l.* or 160*l.* monthly.—Number of hands Employed: Tutwork, 27; carpenter, 1; smith, 1; spalling and general surface works, 1; landing and filling, 1 man and 1 boy: enginemen, 2; at stamps 1 man, 6 boys, and two girls: total, 43.—J. PRISK.

The manager, Capt Joseph Prisk, was in attendance with the plan and section of the mine, and gave by the aid of these a very satisfactory account of the last six months operations, which resulted in his report being passed and unanimously adopted, as also a vote of thanks to him for the satisfactorily manner in which he had thus far opened up the mine. A call of 7*s.* 6*d* per share was proposed by the holder of 880 share, which being seconded, was put to the meeting and carried. The manager expressed himself greatly disappointed at the lode in the shaft having fallen off so much since the last meeting, but he was of opinion that it would be met with rich again shortly, and to accomplish that was his object, as it is one of the principal points of operation. He strongly advocated the strictest economy consistent with the merits of the mine, while the price of tin was so low.

A vote of thanks to the Chairman concluded the business of the meeting.

MINING COMPANY OF IRELAND.

The half-yearly meeting of shareholders was held at the company's offices, Lower Ormond Quay, Dublin, on Thursday,

Sir ROBERT KANE, LL.D., in the chair.

Mr. W. HAROLD (the secretary) read the notice convening the meeting, and the directors' report, showing a profit of 191*l.* 8*s.* 4*d.*, after expending 550*l.* 17*s.* 4*d.* on necessary improvements at the several establishments. Adding this net profit to the amount brought forward the total available balance was 685*l.* 3*s.* 6*d.* No dividend was recommended.

The CHAIRMAN regretted that the expenditure at Knockmahon Mines had been considerably beyond the earnings. From this mine the only returns were a small quantity of ore, which the shareholders at a previous meeting expressed an opinion might be raised by the miners more for the purpose of allowing them a means of subsistence during the severe months of winter than that of profit, and it was satisfactory to find that, while conferring great benefit on these poor men and their families, the company had not been put to any other expense. The Knockmahon expenditure, 101*l.*, was due to permanent charges, and included 36*8l.* for land damage. She Slievardagh Collieries had been about the same as for several half-years. There was a profit balance of 128*8l.*, of which, under the adverse circumstances temporarily prevailing, they could not complain. The Duhallow Collieries are practically abandoned, owing to encountering a mass of igneous rock in the principal seam. The Luganure Mines are turning out about the same quantity of lead. Great progress had not been made owing to the depressed state of the lead market, but at former prices good dividends would have been paid. These mines had not ceased in productiveness; the plant was in excellent condition, every new improvement being employed; and, with the revival of trade now probable, he hoped they might on the next occasion meet under more favourable circumstances,

Mr. EDWARD FOTTRELL seconded the resolution, which was unanimously agreed to.

Mr. AMBROSE STOKES thought something more should be done with the Slievardagh Collieries to make them profitable.

The CHAIRMAN, in reply to Mr. ALLEN, said that the Great Southern and Western Railway, although strong representations had been made to them, retained the prohibitory rate for the carriage of coal and culm.

In the short discussion which followed, Messrs. Hughes, Clinch, Hogan, Allen, Ryan, Connell, Vickers, and others took part, and the usual complimentary vote of thanks having been given to the Chairman, the proceedings terminated.

[For remainder of Meetings, see to-day's Supplement.]

ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY.

TIRITO.—Capt. Wm. Clemo, May 31: The back stope south still remains idle.

PROVIDENCIA.—The back stope in this place continues to produce very fairly, but has no change worthy of mention.

LA VIRGEN. The back stope in this lode over the tunnel level continues to show good spots of green ore mixed with the black.

MINA GRANDE.—In the San José winze the ore has very much failed. The winze is now 23 ft. below the tunnel level. It is now suspended, but I think it is worthy of a fair trial, as I think the ore will make again at a little more depth. The old Mina Grande stope has been resumed, and, I think, has rather improved since it was last worked.—Crux Verde, or Old Shaft (please note this old shaft is a little to the south of the Dios Padre boundary): We have a pare of tributers taking out a little green ore from some old works in this place; this pitch at present looks very promising, and the ore is of very fair quality. I think this lode joins on to the great east vein.

TIRITO.—June 7: In the drive west from the prospecting cross-cut, south of the south slide, we have resumed work in the past week, and cut another branch of ore. We are now going to drive this through to the tunnel to ventilate the south and Soledad works, which are at present very badly suffocated.

PROVIDENCIA.—The back stope in this place continues to look well, but has no change from last week.

LA VIRGEN.—The back stope in this lode over the tunnel level is now idle. We are now rising for a new stope. The lode in the rise shows more green ore as we get up. I think this lode is going to change into green ore when we get up a little higher.

MINA GRANDE.—The old stope in this place continues to produce very fairly as regards quantity; the quality appears to be about the same as it has been for some time past.—Crux Verde: This pitch continues to turn out a fair quantity of green ore, and I think it a place of fair promise.

Frank W. Breach, May 31: Assays: The following are the results of the week's assays:—Vat tailings, 5·25 ozs. per ton; precipitate for export, 192 mils.; tortas on patio, $61·48 per ton; green ore delivered by the tributers from the Crux Verde part of Mina Grande, $75·82 per ton.

Output: The output for the past week has been as follows:—Providencia Mine, 150 tons; Mina Grande, old stope, 2¾ tons; ditto, Crux Verde, 1¼ tons; ditto, San José, 4½ tons; Virgen, 34½ tons. Of the above ore that from the Crux Verde was cleaned ready for stamps, and consequently the amount appears small as compared with the other lots of rough ores. The petanque received for the week is 75 lbs. You will note from Captain Clemo's letter that the ore in the San José winze has failed. We have simply sunk perpendicularly through the vein of ore, which we know dips to the south, and as soon as we can prosecute the exploration I would advise continuing the winze on the dip. From the assay of the Crux Verde ore you will observe from the remark I made last week that the value is more than double what I expected. The ore, although green, is of a different appearance to any other in the mines, and compared with which appears of a rough coarse description of poor ore. On ascertaining the value of this new work I have had the old shaft timbered and secured at the surface, and properly "collared" to save it from damage during the approaching rainy season. The men are cleaning the rubbish to get to the bottom of the old works; now we know that expenses can be cleared, and a good margin left from the ore taken out, we shall push on the work as fast as the small amount of labour obtainable will allow us.

June 7.—The output for the week is as follows:—Providencia, 129 tons 1500 lbs.; Mina Grande, Old Stope, 31 tons 1000 lbs.; Virgen, 15 tons 1500 lbs.; Tirito, 20 fms. backs, 30 tons; ditto, south of slide, 2 tons 500 lbs. From the tribute pitch in the Crux Verde no ore has been received during the week: the tributor has some 10 tons ready for delivery. Of pitanque none has been turned out sufficiently solid for selection for export. The ore from the 20 back in the Tirito is part of an old pillar of ground left in past times as too poor to be worth extracting. I yesterday went through the old works in the Crux Verde; the works are more extensive in the bottom than report led me to expect, and I begin to think that no one whom I have spoken to really knows much about the bottom of the mine. We got down to about 115 ft. from the surface, where the old miners have extracted ore 15 to 20 ft. in width. Both the north and south ends are solid ground at that level, and will pay to work for 6 to 7 ft. wide; the lode is very much disordered as might be expected from its proximity to the precipitous side of the mountain. Should the ore continue in the ends we shall sink a winze in solid ground, and endeavour to reach the bottom by that means instead of clearing out the rubbish from the old works, which might not be safe; this will also get the mine into systematic working.

You will note we have taken out ore from the south of the south slide. In order to prosecute the exploration under the Soledad now the hot season has set in it is necessary to establish ventilation better than we have obtained at present, and for that purpose, and at the same time to explore the ore ground discovered south of the slide, and open a short road to the Soledad, we have commenced connecting the south-west cross-cut, south of the slide with the tunnel. This work, when finished, will effect the three objects, and as the ground is easy it will not take more than four to five weeks to accomplish. In the end a very fine wall is now cut, with a branch of ore on it going south-east. This should be followed as soon as ventilation will permit. In the Mina Grande we are only extracting sufficient ore for the requirements of one furnace, which, in consequence of the San Juan holidays, will be shortly stopped until about the second week in July, and to provide this small amount of ore does not open out the lode very fast, but from all we see we are led to believe that a large amount of ore exists to the north of any of our works under the tunnel level. In my letter of last week I made some remarks on the yield from the Tirito Mine, and I now beg to submit the following extracts from the accounts of the amounts expended on capital account, which, as far as underground works are charged, merely included the machinery, pumps, and shaft sinking, but not the cost of explorations:—Expenditure on Capital Account from Feb. 21, 1870, to end of May, 1878, as per accounts, $229,564·18; Providencia schooner account, $12,275·71; Dios Padre Mine, purchase, &c., $5290·28; dividends paid on 130,000 shares at 6*s.* 3*d.* each, $210,600, amounting to a total of $457,730·14 that has been returned by the mines outside working expenses and exploration.

From this amount must be deducted whatever capital has been put into the mines as "working capital," the particulars of which I have not, but I think you will find that an amount of about $380,000 will remain to the credit of the mines. Of this amount I do not think any belongs to the Providencia or Mina Grande, as the latter has always yielded poor ore, and the ore in the former has merely consisted of ends of Tirito deposits that entered the Providencia Mine from the Tirito, and being such really belong to the latter mine. A glance at the section of the mines will I think show this very clearly. Regarding the width of the ore, while the widest stope in the Providencia Mine did not measure more than 25 ft. across, the 20 fm. level backs in the Tirito were 75 ft. in width of almost solid ore.

I hope the consideration of the above may help to induce the company to explore at least the Tirito Mine south of the south slide.

The directors on the 8th instant received the following telegram from Mr. John Henry Clemes, the new superintendent:—"Drought causes scarcity in reduction works. The ore in the new east lode (Providencia) continues to make downwards—now green. We have remitted you ore and bullion."

A petition for the winding-up of the Flagstaff Silver Mining Company of Utah is to be heard on the 26th inst.

FOREIGN MINES.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received July 1, 1878, ex Mondego (s), dated Morro Velho, June 1:—

GENERAL OPERATIONS—GOLD EXTRACTED TO DATE.—The produce for the second division of May, a period of twelve days, amounts to 13,215·4 oits. = 1523·4745 ozs troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	8,816·8	from	18·3	= 4·810
do Praia	786·3	,,	1·87	= 4·204
Mineral free from killas	3,148·8	,,	439	= 7·172
	12,751·9	,,	2459	= 5·186
Retreatment	463·5	,,	—	= ·189
Total	13,215·4		24·9	= 5·374

Advices received July 15, 1878, ex Elbe (s), dated Morro Velho, June 18:—

GENERAL OPERATIONS.—The average yield per ton of the mineral treated during the month is a trifle under that for April. From retreatment the return of gold is less by 499 oits., owing to the stoppage the greater part of the month of the Ilingworth wheel. The output, though higher by 886 wagons, has been chiefly mineral of mixed quality, the pure pyritic proportion being less than in former periods; to this continued addition of mineral of low grade from the advanced point of attack, both eastern and western sections, is due the decline in produce and standard. These works are, however, all important with a view to increased reserves of ground for future operations.

GOLD PRODUCE FOR THE MONTH OF MAY:—

	Oits.		Tons.	Oits. per ton.
From general mineral	23,954·8	from	4777	= 5·015
,, ditto Praia	2,367·6	,,	502	= 4·716
,, mineral free from killas	7,980·3	,,	1163	= 6·861
	34,302·7	,,	6442	= 5·325
Retreatment	1,260·1	,,	—	= 0·195
Total	35,562·8	,,	6442	= 5·520

= 4099·8123 ozs troy; ·8363 ozs. per ton.

REDUCTION DEPARTMENT.—The amount of mineral treated is higher by 383 tons. Total quantity of ama gam, 79,992 oits = 44·45 per cent. pure gold.

Extensive repairs have been made to the stamping mills. The Ilingworth wheel has been rebuilt, and is now working at an increased rate of speed.

At the amalgamation house arrangements will shortly be completed for the entire re-laying of the straking floor with new Saxe launders, all of which are much needed.

COST AND PROFIT.

The produce for May being	35,562·8 oits.	
Less loss in melting	88·5 ,,	
	35,474·3 at 7*s.* 9*d.* per oit. =	£13,748 7 4½
Cost		7,493 1 8½
Profit for the month		£ 6,251 5 10

MINE.—Mineral raised from mine ..... 6945 wagons.
Mineral quarried per borer daily ..... 2·02 ,,
Average number of borers daily ..... 126·81
Average number of natives daily ..... 201·29

SUMP AND STOPES 278, "A" AND "B."—The sump has been sunk 7 ft. 6 in., and the mineral raised therefrom of fair average yield. The width of lode and pure mineral contents is not quite so large, which decline may be looked for as extension easterly is made. With this exception the general appearance of the mineral body in both the sump and stopes is without change. The object of the present direction of the sump, leaving the more productive part of the mineral body to the west, has already been fully explained.

LEVEL ABOVE SUMP.—There has been no increase in the width of the lode at this point. The stope continues to yield a fair supply of mineral.

EASTERN DRIVING UNDER ROOF AND STOPE, 217 C.—Advance for the month, 4 ft., without change. The yield of mineral from the stope is still limited, the condition of the lode at this horizon, though of good quality, being contracted and difficult of extraction. In view of the near approach of the sump towards the angle line of these two exploratory points, the question as to a temporary suspension of these works is now being considered.

WESTERN SECTIONS, 255 A AND B. There has been a large extraction of good mineral from the above stopes with no falling off in either the width or quality of the lode. In consequence of the deepening of these sections there has been an increase in the stoping area, all of which is mineral of fair average yield.

234 B AND WESTERN LEVEL.—The stope is without change. In the level the advance made is 7 ft. 6 in., with no special change to advise. An alteration in the bearing has been made, with a view to ascertain the probable extension of the mineral body more to the north-west.

B SHAFT has been sunk 10 ft. The Darlington drills have been worked during two corps.

Total number of holes bored	195
Total depth of holes bored	8141 in.
Total number of minutes	6741
Average time per inch	0·82 min.
Pressure per square inch	60·59 lbs.
Number of revolutions per minute	87·34

GOLD EXTRACTED TO DATE.—The produce for the first division of June, a period of eight days, amounts to 9590·4 oits. = 1105·6170 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	6,384·5	from	1275	= 5·008
,, ,, Praia	726·5	,,	191	= 3·803
Mineral free from killas	2,154·0	,,	320	= 6·731
	9,265·0	,,	1785	= 5·190
Retreatment	325·4	,,	—	= ·182
Total	9,590·4	,,	1785	= 5·372

Equal to 1105·6170 ozs. troy = ·6193 ozs. troy.

REDUCTION DEPARTMENT.—The Ilingworth wheel and arrastras commenced working on the 2nd inst.

MINE—RETURN OF DUTY FOR THIRTEEN WORKING DAYS:—

Mineral received from the mine	3307 wagons.
Mineral quarried per borer per diem	2·29 ,,
Average number of borers daily	111·07
Average number of natives daily	195·61

The borer force is lower than it has been for some months past, many being absent for the gathering of their small crops.

No special change to advise in the mine section.

THE GOLD TROOP was dispatched on June 12, taking 45 bars of gold weighing 71,005·3 oits = 8185·7 oz. troy.

N.B.—The gold has duly arrived.

The following telegrams have been received:—

On June 18—"Produce for the month (May), 35,500 oits.; yield, 5·5 oits. per ton. All going on well."

On June 24—"Produce eight days (first division of June), 9500 oits.; yield, 5·4 oits. per ton."

On June 28—"Profit for the month (May), 6200*l.*"

On July 5—"Produce, eleven days (second division of June), 11,750 oits.; yield, 5·4 oits. per ton. All going on well."

On July 18—"Produce for month (June), 35,000 oits. = 13,562*l.*; yield, 5·4 oits. per ton = 7·2 by old measurement. All going on well."

On July 17—"Produce eight days (first division of July), 9000 oits.—3477*l.*; yield, 5·5 oits. per ton—6·8 by old measurement."

DON PEDRO NORTH DEL REY (Gold).—Report for May: Produce from 2111·60 tons, dry weight, 1526 oits. = 648*l.* 11*s.* Cost, including all general expenses, 2104*l.* 19*s.* 4*d.*

— Capt. Vivian, June 18: Produce weighed to date, 309 oits.—Cost and Produce: Your remarks on this head are duly noted, and have had my attention for some time past. You will see by last month's cost that it is considerably reduced, although it includes about 300*l.* for dead work, account of which I send herewith. I fully expected we should have pulled through all difficulties without troubling the shareholders, and this may yet be done, as you are aware that every endeavour will be made on this side to enable you to accomplish this. At present, however, the produce is very small, only owing to the poorness of the mineral from the upper level, where the lodes are still large, and have a very promising appearance, therefore a change for the better may occur at any instant. If we could only work the rich courses of ore at the bottom of the mine, then a great increase would be obtained at once, but in consequence of the water having been in that part of the mine for such a length of time, thus causing the surrounding ground to become saturated with water, it is impossible that the lodes at that point can be worked on below they are drained from below.

— Telegram from Rio, dated July 7, referring to a later date than the above report, advised 1050 oits. for the month of June.

SANTA BARBARA (Gold).—Mr. Hilcke, June 12: During May 1026 tons of mineral were stamped, producing 3312 oits. of gold, and 64 tons of refuse sands retreated by the pulveriser, yielding 35 oits. of gold, or a total of 3347 oits. of gold, equivalent to 3·262 oits. per ton of stone stamped. The produce of 347 oits. valued at 8*s.* 6*d.* per oit., amounts to 1422*l.* 9*s.* 6*d.*; and the estimated working cost for the month at exchange 23*d.*, being 1083*l.* 11*s.* 4*d.*, leaves an estimated profit of 338*l.* 18*s.* 2*d.* for May. Mr. Hilcke reports that the improvement in the lode met with at No. 4 stope confines itself so far to about 3 fms below adit from this place downwards; it is of rather poor quality. At No. 5 stope the lode maintains its usual appearance, and at the bottom of the shaft we have a strong looking lode of from 7 to 8 ft. wide, of good productive quality, which shows an improvement in the last 4 or 5 ft. sinking. But little has been done since last advices towards the completion of the pumps, owing to so many other repairs of urgent nature having to be attended to the men are prevented constantly working at these pumps. The quantity of ore raised during the month amounted to 1324 tons, of which 298 tons were rejected as refuse stone, and 1026 tons treated at the stamps. Average quantity of ore raised per borer for the month 8·7 tons.

RICHMOND CONSOLIDATED.—The directors have declared a dividend of 1*l.* per share, free of income tax.—Telegram from the mine at Eureka, Nevada: Week's run, 850 tons, from 1000 tons of ore. Refinery, $50,000.

— R. Rickards, June 26: During the past week operations in both mine and smelting works have been carried on with the usual regularity. There is no change in the winze in the bottom of the 200. We are now drifting from the bottom in a northerly direction, expecting to strike the ore again, which appears to have flattened out in that direction. The 400 main drift west is still very hard limestone. Since my last we have made a rise in the back of the No. 4 chamber 40 ft., in very good ore. The present top of the rise is in low-grade ore. No. 4 chamber is not looking so well as it was. Communication has been made between the No. 9 and 5 chambers. There is considerable ore still standing in No. 9 chamber, but No. 5 is very nearly worked out. There are still pillars of low-grade ore standing, but of too low grade to work at present. No. 7 chamber is looking well, and showing a large body of good ore. A winze has been begun at the bottom of this chamber, and has been sunk 25 ft in very good ore, but the present bottom is in low grade ore, and narrow. No. 8 chamber is still turning out small quantities of low-grade ore. The chambers are not looking so well as they were. The 500 cross cut is in favourable ground for drifting, but no ore. The 500 on floor is being drifted south; the present end is hard. The rise on fissure in the 40

west is upabout 100 ft. on the incline in very favonrable ground. This rise is being put up to connect with the No. 7 chamber for ventilation and exploration. The winze sinking on fissure from the chamber in the 500 west is on the same fissure as the rise. The wall is well defined and regular, but no ore. The present bottom of winze is in discoloured lime and lodge matter. The 600 drift west is in hard ground. The rise in the back of the 600, on quartzite, is without any change since my last. There is no change in the 800 since last reported. We are still drifting on the quartzite, with very good indications for ore. We have been obliged to suspend sinking below the 900 on account of water, and having no pump ing machinery we cannot sink any deeper. Air compressing machinery is being ordered, and as soon as erected will admit of sinking below the 900, and also ex ploring the mine with more rapidity. The three stone furnaces are in good working order, and smelting on an average over 50 tons per diem each.

BLUE TENT.—D. T. Hughes, June 20: Washed successfully in all the claims during the past week, and in the Blue Lead we are able to pipe the bank much more readily than before. We exploded the small blast there the last week; that blast blowed up a very hard point which before interrupted considerably in our progress. In South Yuba we are washing quite steadily; also have another blast nearly ready to explode, and another just commenced from the old Gopher side. Have also a powder drift constructed under a body of cement on the upper strata at the head of the Gopher sluice, but will not explode that at present until we have a certainty about the extent of our water supply, as by the explosion it will likely interfere with the South Yuba sluice by throwing a portion of the material over the bank to the latter pit.

MINERAL HILL.—Mr. Plummer, June 24: Star and Giant Mines: There is little to report in this portion of the mine differing from my last. We have not taken away much of the back of the Star Mine proper, but are following the ore that is making in a large block of ground between the two mines (Star and Giant), where we have been getting good ore, which appears to be spreading.—Troy Winze: This winze is again let for 40 feet, with all necessary drivages therefrom, for $20 per foot (price to carry all costs) to two men. The ore assorters are making fair progress in assorting and collecting ores.

LONDON AND CALIFORNIA.—The clean-up at the Original Amador Mine for the month of June is estimated at $4000.

GOLD RUN (Hydraulic). Telegram from the superintendent: We have cleaned up after a run of 21 days: produce, $5·00.

COLORADO UNITED.—July 16: The following telegram from the superintendent reached the office this morning: Mill started to-day; working well.

SIERRA BUTTES (Gold).—Result of the working at the mines for June: Sierra Buttes Mine: Total receipts, $29,108; total California expenses, including cost of mining, milling, and $4000 on water-power account, $24,843.—Plumas Eureka Mine: Total receipts, $36,510: total Californian expenses, including cost of mining, milling, and $6700 on new works, $24,917.

FLAGSTAFF (Silver).—The directors have received the following information from the Chairman in Salt Lake City:—Decision in Turbet suit appealed against. Rehearing in Davis suit secured. Output for May, 2270 tons; gross yield, $36,000. Mine looking well.

JAVALI.—Extracts from Manager's Report, dated June 6:—"As to the very important point of getting sent out an engineer fitter and boiler maker, or both, from New York to put the engine in thorough order for the next season, I come, on mature consideration, to the conclusion that this would involve very heavy expenses which this year can be very well avoided. You will see by our working during the whole dry season that the engine must have been in a good condition, or we should not have been able to make the returns the monthly report shows. Before the dry season set in, according to your order, she was thoroughly overhauled by Roskilley, and his report shows she was in a perfect sound condition when we commenced work. During nearly six months' run there were, of course, some repairs to make; but we were always able to do the needful without aid from New York. As soon as the wet season really sets in, or that we can do away with the engine temporarily, I intend to have it looked well over again by Roskilley, and a few articles which I need for this purpose you will find under the head of goods ordered.—Mine: Owing to several rainy days, a little more work has been done in the mine than last month; 52½ varas were driven in the mine; all the rest of the ore extracted has been taken, as usual, from the surface. We have been busy preparing the timbering on the stopes for work during the next wet season, so that we shall have no delay when it really sets in. Tramways and everything in good condition.—Mill and Remittance: 25 stamps worked 25 days, crushing 2025 tons of ore, which yielded 623 ozs. of smelted gold, making a general average of 6 dwts. 3·67 grs. You will see that the quality has been falling off a little, but I have every hope that it will rise again next month. We have had occasional showers already, but not sufficient to drive our turbine; and at present I fear we shall have to wait some days before we can use it. I have to stop a couple of days longer this month to clean out our entire watercourse, which is filled up very high with sediment from St. Domingo Mill, and have to make all the necessary repairs of turbine and gearing, so as not to have any more stoppages when the water is sufficient to do away with the engine for a time. I note what is said with respect to drawing bills, which shall have my attention; at present money is so scarce in the country that it will scarcely be possible to sell bills.—Receipts and Expenditure: The two boxes of coin, with $4351·50, were duly received. The expenditure has been 990l. 3s. 9d.; remittance valued at 1550l.; thus leaving a balance profit on working expenses of 559l. 16s. 3d.—Goods Received: In consequence of the awful dry state of the river the Navigation Company has laid up all its boats, and stopped the transportation of freights entirely, so I did not receive any freight this month.

CHONTALES.—The directors have received advices from the manager, dated June 5. During the month of May they crushed 640 tons of ore, which produced 168 ozs. of ore, or an average of 5¼ dwts. The total cost for the month was 595l., and the value of the gold 440l., showing a loss of 155l. The manager reports that since the date of his former letter some more of the machinery and stores had reached the mines, including the parts for the engine, and that now the greater part of the machinery has arrived he hopes to be soon in working order.—San Sebastian Mine: Drive in main level, 15 varas; the lode here has been for some time poor, but it is now again showing indications of improvement. In the early part of the month we commenced a new rise in back of this level, and rose from time of commencement 14½ varas above the back, where the lode is now 2 ft. wide, worth for gold 5 dwts. per ton, and is the shoot which now appears to make itself in the end of the main level. We rose in the rise communicated last month with shallow level 20 varas, and holed to surface; this rise has gone through some good paying ground. Stoped in high stopes, 220 cubic varas. Raised during the past month, 1045 cars, or 892 tons of quartz, worth on an average 4¾ dwts. per ton, also 164 cars of attle.—Estrella Mine: In this mine I gave the men last month a searching price for taking away any old pillars or the best of the quartz from the different places in the mine; this can do no damage to the mine now the main level is made secure and strong, but, on the contrary, may lead to discoveries, besides taking away some of the most profitable quartz that we could not venture to meddle with until the repairs of the main level were completed. After the bridge is completed, and the cost of repairs has become less, I purpose opening out this mine on the same scale as San Sebastian. Total quartz raised from Estrella during the past month, 339 cars, or 215 tons, which produced 52 ozs. of gold, or an average of 5 dwts. per ton.—Machinery: At San Domingo mill the foundation is made all right, and now the greater part of the machinery has arrived we hope to be soon in working order. Total quartz treated during the past month at the above mill, 425 tons, which produced on an average 5½ dwts per ton: total, 116 ozs. of gold. At Estrella the pneumatic stamps when at work answer well, and the plates amalgamate beautifully.

PLACERVILLE (Gold Quartz).—Thomas Price, June 24: I wrote you last on the 3rd inst. I have spent considerable time at Placerville since writing to you, from which place I wrote to Mr. Courtenay. On my return I found your favours of May 28 and the 4th inst. While at Placerville I examined the mine very carefully, and had the whole very thoroughly surveyed, and enclose you herewith a tracing of the underground workings. I have now also in preparation a detailed map, which will enable you, when completed, to follow us in our explorations. Until the present time it was impossible to have a proper map constructed. I will now, if you will please kindly follow me, endeavour to describe the condition and prospects of the mine, and I shall use the inclosed rough map as my illustrations:—1st, I beg to refer you to map No. 1, and to point C D cross cut, where I connected the vertical shaft with the old workings. I cabled to you that the distance was 52 ft., but it proved to be only 20 ft. I calculated the distance at 52 ft. from the position of the vein as shown on map 3 at the point D—where the vein is more or less disturbed—where this cross-cut reached the old workings. We had considerable water, as that part of the mine shown on map 3, point C, D, E, F, G, 5, 6, and 7, was filled with water, but it was soon exhausted and permitted me to make a thorough examination. The adit level incline G H, map 3, I found in good condition. Passing along the level E, H, F, at the bottom of the incline, I find that nearly all the quartz has been removed excepting pillars indicated at points I, J, K. At point F the vein has evidently made a heave into the footwall, which is slate, but no evidence whatever that the vein has given out: the quartz is about 3 ft. wide at this point. From E to H on the same level the quartz will average fully 12 ft. The quartz remaining in the pillars I, J, K looks remarkably well, as does that also at F, and the existence of the underhand stope H, L indicates good ore in the bottom. The quartz that has been sent you came from point A on Map 3. The quartz, assayed results of which you have, came from A, B, C on same map—*i.e.*, No. 3. The vein at point D is fully 3 feet in width, and one assay from that point yielded $10 per ton. At point C south drift on map 3 the quartz vein is 10 ft. wide. We have at the present time developed and opened up available quartz represented by blocks B, C, D, E, F, G—half of each—and 7, 8, 9, or a block measuring 175 ft. in length by 100 ft. in length, which will average not less than 6 ft. of quartz, equivalent to 8000 tons of quartz. As to how much of this is sufficiently rich to pay a profit, I cannot as yet commit myself; by the aid of Map 3 you can estimate as well as I can. You can see that the block, C, D, E, F, 1, 2, 3, 4, 5, 6, and 7 in part has had all the quartz removed, and from the best information I can find, and on my last visit to Placerville I had the opportunity to examine the secretary's books for 1853, 1854, 1855, and 1856 in part, during which time over $500,000 had been extracted, 60 per cent. of which been declared in dividends; the quartz had averaged $22 per ton. The quartz found at A, B, C goes to show that the pay quartz continues, hence we have every reason to expect good pay ore in the present available stopes. My future mode of attack is the following:—Firstly, finding that the upper 100l t. of the vertical shaft is in very bad condition, the planks and timbers being perfectly rotten, endangering both the machinery and the lives of the workmen; it will take about 20,000 ft. of lumber to put the shaft in good condition. Mr. Thomas is now busily engaged at this work; this being done, then, secondly, I shall have a rise made from stope A. B. C 3, level E, H, F. This rise will be made on the hanging-wall, as I find this will cost less than rising through the quartz. This being done, I shall commence to stope the quartz at this place, and at the same time commence to sink winze down at point A in order to prove the character of the quartz to the depth of 100 ft. or so before commencing to sink the vertical shaft. The quartz from the winze and stope above will be milled separately. In the meantime, of course, I shall also break down quartz at points E, H, F, C south drift, and D north drift, and if possible I shall enter the old works above adit level, as I was informed by the old secretary that there is some very rich quartz in some of the old pillars. I shall visit Placerville again inside of a week, as I want to give the property as much as I possibly can of my personal attention, as it is very important at the present time watch every change.

MALPASO.—W. S. Welton, May 28: Run No. 46, from April 17 to May 17, 31 days, during which time washing was carried on for 332 hours, has produced 99 75 ozs. gold, valued at $1845 (370l.) The estimated cost for the above period is as follows:—Running cost, $1000; new ditch extension, $162; new opening, feasts, damage to ditch through heavy rains, and from the length of sluice cleaned up. Owing to the bank getting lower and the sluice rising at the same time, the proportion of waste to gravel is about half of each; this makes a very great difference in the quantity of pay dirt run off, as it takes at least three times the quantity of water to run off waste as it does to run off the same quantity of new dirt.—New Opening: During the month the sides of the 170 ft. of sluice put in have been risen 10 ft. high in the manner mentioned in my last, and this has been found to answer perfectly, the sluice now running clear without assistance; since then tailings have been run out, so that 100 ft. more sluice can now be put in as soon as the nails purchased in Bogota arrive.—Ditch Extension: The bridges are all in their places, and the timber prepared for the flumes. Nothing prevents this work from being completed at once but the want of nails. These are expected to arrive daily.

MALABAR.—G. B. O'Reilly, May 29: The clean-up was completed on the 23rd inst., giving a result for 5·8 hours of $1276·30 (255l.) A very large proportion of our work was expended on picking and running off pipe clay. The proportion of gravel dealt with has been unusually small, and the result obtained is quite as much as I expected. We are now making a radical change in our rig, which ought to facilitate future operations; and as we are getting beyond the influence of the lower streak of pipe-clay, it is to be hoped that we shall be able in our succeeding runs to run off more gravel in proportion, and perhaps put in better time.

ALAMILLOS.—July 10: The lode in the 20, west of San Felipe's, is again improving; valued at ½ ton per fathom. In the 25, west of Abercrombie's, the driving is suspended for the present. In the 100, east of Taylor's, there is no improvement. The lode in the 100, west of Taylor's, is open, and moderately easy for driving, but does not contain any ore at present. In the 85, west of San Adriano, continues unproductive. The lode in the 60, east of San Victor, is very large, but without ore. In the 70, east of San Victor, there is a large strong lode of calcareous spar and lead ore; yielding 1 ton per fathom. The lode in the 70, west of San Victor, is strong and regular, but does not contain any ore. In the 60, west of San Victor, the lode is again improving; now worth 1 ton per fathom. In the 40, east of San Victor cross-cut, a good length of valuable lode has been driven through; producing 1½ ton per fathom. The lode in the 30, east of air shaft, is small and poor. In the 30, west of air shaft, the lode is improving. Nothing of value has been met with in the 40 cross-cut, south of San Carlos. The 40, east of Judd's, is still opening a valuable lode, but not nearly so good as it was; it is worth 1½ ton per fathom. The ground in the 50, east of Judd's cross-cut, is hard, and the lode small. The lode in the 70, west of Judd's shaft, is disarranged and unproductive. The lode in Hidalgo's winze below the 85 is strong and regular, and yields good stones of ore; worth ¼ ton per fathom. In Ortiz's winze below the 40 the lode is large, but not of any actual value. The weekly returns of ore were kept up very well during the past month, and many of the stopes are yielding fairly well at present. The ordinary surface work is kept on very regularly, and the machinery is in good condition. We estimate the raisings for July at 200 tons.

LANESTOSA.—July 4: The cutting down of La Cruz shaft is completed to the 50 metre level. The lode in the stope in the back of the 50 metre level is 4 ft. wide, with 2 ft. of solid blende, which makes in splices, producing 3 tons of blende per fathom. In the stope in the bottom of the 50 metre level there is a branch of blende on the footwall and one of calamine on the hanging wall, with 3 ft. of horse between. The blende only is worth following at present, and it seems to hold down strong, yielding 3 tons per fathom. The stopes in the back and bottom of the adit are too poor to pay at the present prices of ore.

FORTUNA.—July 10: Canada Incosa: In the 120, west of O'Shea's, the lode is small, and not so productive as it was, yielding ½ ton per fathom. The lode in the 30, east of San Carlos, is somewhat improved, now worth ½ ton per fathom. In the 50, west of Abercrombie's, the lode has again become productive. The lode in the 60, west of Abercrombie's, is split into several branches. In the 50, east of Abercrombie's, a valuable piece of ore ground has been opened, but the lode is not so good at present, worth 1½ ton per fathom. The lode in the 70, west of San Pedro, continues unproductive. In the 80, west of San Pedro, there is a regular and promising lode, but at present it does not contain ore enough to value. The lode in the 80, east of San Pedro, is strong and well defined, with good stones of ore, yielding ½ ton per fathom. In the 70, east of San Pedro, a good length of rich lode was driven through in the last month, but it is poor at present. The lode in the 120, east of O'Shea's, is split into small and unproductive branches. In the 100, west of Lownde's, the lode is easy, but of no actual value. The lode in the 100, east of Lownde's, is open, and of a promising appearance, producing ½ ton per fathom. In the 90, east of Caro's, the lode is very small, and not opening paying ground. The lode in Pablo's winze below the 50 is large, consisting chiefly of quartz and lead ore, yielding 1 ton per fathom. Diego's winze, below the 110, is going down in a very fine lode, worth 2 tons per fathom.

Los Salidos: The lode in the 145, east of Morris's, is not so productive as it was a short time since, now worth 1½ ton per fathom. The ground in the 130, east of Morris's, is easy for driving, but the lode is of no value. The lode in the 120, east of Cox's, is again improving, now yielding 1 ton per fathom. In the 110, east of San Pablo's, a good length of valuable lode has been opened in the past month, valued at 1½ ton per fathom. The 65, west of Palgrave's, is suspended for the present. The lode in the 80 fm. level, west of Palgrave's, is small, but has a promising appearance; valued at ¾ ton per fathom. In the 80, east of Palgrave's, the lode is changeable, and at present less productive than it was, but still worth 1 ton per fathom. The 35, east of Palgrave's, being near Quinientos Mine is suspended. In Swaffield's shaft below the 50 good progress is being made. The lode in boundary winze below the 65 is unproductive. In Taylor's (late Morris's) engine-shaft the men are getting on rapidly with the sink. The weekly weighings of ore were kept up very regularly in the past month, and the stopes are yielding fairly well at present. The machinery throughout the mine is in good condition, and the surface works are going on very satisfactorily. We estimate the raisings for July at 200 tons.

LINARES.—July 10: The lode in the 120, east of San Tomas, is very large, with good stones of ore. In the 134, east of San Tomas, the lode is very wide, but does not contain ore enough to value. The 135, west of San Tomas, is being driven on the south wall of the lode. The lode in the 100, east of Warne's, is easy for driving, and is opening paying ground; valued at 1 ton per fathom. There is no improvement in the 115, east of Warne's. The lode in the 115, west of Warne's, is very powerful, yielding fine lumps of ore, valued at 1 ton per fathom. In the 120, west of Peill's, the lode has somewhat fallen off lately, and now worth ½ ton per fathom. In the 90, west of Peill's, a good length of valuable lode is being driven through, yielding 1 ton per fathom. The 120, east of Peill's, is not so productive as it has been, and now worth ½ ton per fathom. From the 105, east of San Francisco, the men are put to drive north to prove another part of the lode. The 90, east of San Francisco, is temporarily suspended while the men sink a winze below the level; lode worth 1 ton per fathom. In No. 224 winze below the 105, very good progress is being made; lode yielding 1 ton per fathom. No. 225 winze below the 90 is a new winze, and is situated east of San Francisco shaft, and in advance of the 105; lode valued at 1 ton per fathom. The returns of ore were kept up during the past month without difficulty, and the stopes on the whole are yielding well at present. The ordinary works at surface are going on very regularly, and the machinery is in good condition. We estimate the raisings for July at 1200 tons.—Quinientos: In the 100, west of Taylor's, the ground is hard, and the lode small and poor. In the 100, east of Taylor's, on opening the north side, the lode is found larger, but without ore. The 90, east of Taylor's, continues unproductive. The lode in the 80, east of San Carlos, has changed unfavourably in the past fortnight. We estimate the raisings for July at 100 tons.

LUSITANIAN.—July 9: Palhal Mine: Levels on Basto's Lode: The lode in the 200 east, end of Taylor's shaft, is 3 ft. wide, and worth 1 ton of ore per fathom. The lode in the 200 west, end of Taylor's shaft, is 3½ ft. wide, and worth 3½ tons of ore per fathom. In the 190, east of Taylor's shaft, the lode is 5 ft. wide, and worth 1 ton of ore per fathom. In the 180, east of Taylor's shaft, the lode is 5 ft. wide, and worth 2 tons of ore per fathom. The lode in the 150 west is 3 ft. wide, and worth 1 ton of ore per fathom.—Stopes on Basto's Lode: The two stopes above the 200, east of Taylor's shaft, are worth 5 tons each for the month. The three stopes west of Taylor's shaft, above the 200, are worth 8 tons each, and the two stopes at the 190 at the back of the end, east of Taylor's shaft, 5½ tons each, for the month.

CAPE COPPER.—Capt. Henwood, Capt. Lanksbury, May 31: Ookiep: The ground in bottom of shaft below the 92 is very difficult to sink in on account of the great quantity of water we have at this point, and the massive quartz we are sinking in being very hard, consequently our progress is comparatively slow. We are very anxious to get the shaft to the required depth and the plat cut, so that we can lay down a tramroad, and make more rapid development at this depth. The 92, south from No. 23 winze, has been extended 15 fathoms in this direction; far enough south to enable us to drive east under the bunch of copper ore east from No. 24 winze, therefore this end is temporarily suspended, and the men are put to drive east—we think this a very interesting point. The 80, east from No. 24 winze, has been driven through good ore ground, and the present forebreast is worth 6 tons of copper ore per fathom. This level has opened out some good stoping ground, and back about 3 fathoms from the end we have started a stope south from side of level to enable us to sink a winze next month. The 80 fm. levels, east and south-east from No. 19 winze, are still in very hard unproductive ground. The 80, south from No. 21 winze, has been driven through ground producing on the average 5 tons of copper ore per fathom: the end is not quite so rich—worth about 3 tons. The stopes at this depth continue to yield well, producing fully their estimated quantities. The cross cuts north and south in the eastern extremity of the 68 continue to yield saving stuff, but not enough to value. The 48, east from No 14 winze, has somewhat improved during the past month, and has shown some spots of copper ore.—New Shaft: This sinking still produces some good stones of copper ore. The driving from this shaft has not yet intersected the branch that we drove on 10 fathoms above; the ground is a very hard porphyritic granite, so we are not making much progress in this driving. The stopes in the 68 and 58 fm. levels have yielded well during the past month.

SPECTAKEL.—Capt Lanksbury, May 25: During the past month the driving north in the bottom of the winze on joint east of flookan course became disordered and poor, and the men were put to cut down the eastern side of the level, which revealed some good ore ground; we have consequently commenced to stope and drive east in ground worth about 3½ tons per fathom. The stope in back of the 3½ east of flookan course, produces a little copper ore.

TRIAL MINES.—Capt. Henwood, Capt. Lanksbury, May 15: Karolusberg Mine: The stope in the adit level west from shaft continues to produce a few stones of copper ore; the men are temporarily withdrawn in consequence of a scarcity of labour at Ookiep.—Nababeep Mine: The character of the rock in the shaft below the 28 is very favourable, and the sinking goes on well at present. In the 28 we have commenced to cross-cut east in order to intersect the ore ground in the bottom of the 17. The end of the 17 south-west yields some good stones of copper ore, and presents a very promising appearance. We propose to sink a winze in this level shortly. The stopes are yielding pretty well.—Narrap Mine: The driving in the 20, south from shaft, continues to show spots of copper ore.—Trial Mine west of Ookiep: The 10, west from shaft, has during the month produced a little copper pyrites, but nothing to value.—Returns for May: Ookiep, 975 tons of 30 per cent.. Spectakel and Nababeep (together) about 30 tons of about 30 per cent. —Bill of Lading Received: 550 tons per Anne Beal.—Arrivals at Port Nolloth: The Goleonda, Gleam, and Antonio Vinent.—Sale of Ore by Public Tender: On July 3, 500 tons, at an average of 12s. 5½d. per unit, realising approximately 9.50l. —Put forward for Sale: 500 tons on the 17th instant.

NATURE AND CHARACTER OF ALLOYS.—In his writing on the "founding of alloys" in the New York Iron Age Mr. Edward Kirk lays down the following formulas: "Alloys of gold, silver, and copper are generally superior in strength to any of the more fusible metals, and may be forged either when red-hot or cold. These three metals seem to unite in any proportions, and always form an alloy that is malleable when either hot or cold. Pure gold is but little used in the arts; it is then too soft. It is generally alloyed with silver and copper, both to harden it and depreciate its value. Alloyed with copper, it forms gold of a red tint; with silver, it forms gold of a green tint; and alloyed with both copper and silver, it gives intermediate tints. Pure silver is but little used alone; it is generally alloyed with a small amount of copper, which does not change its colour, and greatly improves its malleability and working qualities. When gold, silver, or copper are alloyed with the more fusible metals—lead, tin and zinc—the alloy is less malleable and ductile than alloys of gold, silver, and copper. They are extreme red-short, and when heated to redness they will fly to pieces under the hammer; and alloys of brass, bell metal, &c., must be treated with precaution, and should never be taken out of the mould while red-hot. Alloys of two parts copper and one part zinc are very soft and malleable, and may be drawn by hammering or easily cut with a file, but an alloy of one part copper and two parts zinc is as hard and brittle as glass, and may be easily pulverised. An alloy of two parts copper and one part lead makes a soft malleable metal, but is inferior to an alloy of copper and zinc. In alloys of one part copper and one part lead the lead will ooze out in cooling. In alloys of one part copper and two parts lead the lead will not unite, but will sink to the bottom when cooling. Alloys of six parts copper and one part tin make a very hard alloy, and the alloy gets harder and whiter the more tin is added. Alloys of tin and copper should not be too rapidly exposed to the air, for if a large percentage of tin is used it will strike to the surface and ooze out or make hard spots in the casting. Alloys of zinc and lead cannot be made without the addition of arsenic, unless the lead is alloyed in a very small quantity. Alloys of zinc and tin are very hard and brittle, and are but little used alone. By the addition of copper to alloys of these two metals, the alloy is rendered more malleable and soft. Arsenic makes all alloys hard and brittle, and is very dangerous to use. It is seldom used except to impart fluidity to the very infusible metals. Alloys of lead and tin are very malleable and ductile when cold, but at a temperature of about 200° Fahr. they lose the power of cohesion and are exceedingly brittle. The alloys of tin and lead partake of the general nature of these two metals. They are soft and malleable when cold, even when a small amount of brittle antimony has been added. An alloy of six parts lead and one part antimony is very soft and malleable, but an alloy of three parts lead and one part antimony is very hard and brittle; and an alloy of one part lead and one part antimony is harder and more brittle than antimony.

WATSON BROTHERS' MINING CIRCULAR.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest an experienced advice in regard to mines and sharedealing than there is at present and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

WATSON BROTHERS,

MINEOWNERS, STOCK AND SHARE DEALERS, &c.

1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

INVESTMENTS.—We referred some weeks ago to the rage for foreign bonds which arose when it seemed likely that the Congress would lead to success. This has somewhat abated, for it was never anything more than a mere gambling speculation for a rise. We are now disposed to think that peace having been secured (at any rate for a time), the havoc made by war in materials of every kind will have to be made good, all trades will revive, large orders must pour in for metals, and we shall then have a good rise in *bona fide* and legitimate mines. Just now people are thinking more of the hot weather, and of getting away to the sea side, than of entering into speculations, and it will take a month or two for an active business to set in, and then the great rise we anticipate in certain mines may take place. The general public, however, seldom buy as they ought *before* the rise takes place.

X. Y. Z.—Many people write us for advice every week, and we give it publicly and privately, and very often hear no more of our correspondents till by chance we may see their names in a list of shareholders in a mine we have named.

When D'Eresby Mountain were at 20l. each, week after week we called attention to the mine in this place; but it was not "*on the market*," no one had an interest in puffing it, and we were its only friends. Well, we say now that as soon the machinery gets to work good returns of lead will be sold, and there are only 512 shares to divide any profits that may be made. Again, the New Valley sett lately added to the mine is of *great value*, worth many thousands of pounds, after giving all that D'Eresby Mountain requires in the use of its two adits for taking off their water, may be worked as a separate mine on the Great Gorse lode, and at a small cost. It will, therefore, be proposed to the shareholders shortly to work the "Valley" as a separate concern; our plan is to divide it into 512 shares of 20l. each, of which only 10l. would probably ever be required, 5l. down and 5l. at the end of six months.

These shares would command a high premium, but would, of course, be offered *pro rata* to D'Eresby Mountain shareholders at par. Of the 5120l. thus raised in six months we propose to pay D'Eresby Mountain 2560l.—half down, and half at end of six months. This would give that company a good working capital, and enable the mine to pay early dividends from the lead already raised and discovered. We maintain, therefore, that D'Eresby Mountain at the present price are the cheapest shares in the market, and we also strongly recommend Clementina at present prices, D'Eresby Consols, and Aberllyn, all of which in a few months may tell their own tale, as D'Eresby Mountain has done.

THE GREAT GORSE LODE.—We have stated before that this lode was not discovered in D'Eresby Mountain proper.

In order to work the D'Eresby Mountain lodes, that company took up an adit called No. 4, and in clearing it the Gorse lode was discovered. This, as well as No. 5, was outside the sett on the discovery of the lode, but a fresh grant, which at one time gave us great anxiety as to the terms to be imposed, was obtained at an increased rental, merging in dues. Thus a new and valuable mine, which might have been sold for many thousands of pounds, was added and given to D'Eresby Mountain. That company thus obtained a run of nearly a mile on the Gorse lode, independently of the D'Eresby Mountain lodes, which were also of great promise, and to work which the company was started.

The Gorse lode had been previously worked shallow in Aberllyn by Capt. Bennetts himself, who sold blende at 3l. 10s. per ton. We tried to obtain an original grant of the sett, but were too late in the field, and it was afterwards purchased for a large sum of money.

In a letter before us from Capt. Bennetts, of D'Eresby Mountain, dated March 4, 1878, he says—"I only wish that you had the good luck to have had the Aberllyn Mine, for this is a splendid property, where the lode is to be seen 12 ft. wide, samples of which you saw on the mine. The Aberllyn lode *I know* is the large Gorse lode, and I only wish that you had it."

This induced us to purchase deeply in the mine, and we have good reason to believe that we shall not regret it.

SATURDAY, JULY 13.—Market very quiet. Carn Brea, 39 to 41; Dolcoath, 28 to 30; South Condurrow, 11¼ to 11¾; South Frances, 2¾ to 3; D'Eresby Mountain, 80 to 100; D'Eresby Consols, 10 to 11; Great Laxey, 17½ to 18½; Van, 20 to 22; Roman Gravels, 7½ to 8; East Van, 3¾ to 4; Richmond, 12½ to 12¾; Eberhardt, 6¾ to 7¼.

MONDAY, JULY 15.—Market inactive, and the following prices almost nominal. Carn Brea, 39 to 41; Devon Great Consols, 2½ to 3; Dolcoath, 28 to 30; South Condurrow, 11¼ to 11¾; South Frances, 2¾ to 3; Tincroft, 9½ to 10½; Agar, 3¾ to 4; Grenville, 2½ to 3; Peever, 6 to 6½; D'Eresby Mountain, 80 to 100; D'Eresby Consols, 10 to 11; East Van, 3¾ to 4; Grogwinion, 3 to 3½; Great Laxey, 17½ to 18½; Leadhills, 3¾ to 3½; Pateley ridge, 15s. to 20s.; Pandora, 14s. to 16s.; Roman Gravels, 7½ to 8; Rookhope Lead, 17s. to 19s.; Tankerville, 3 to 3¼; Van, 20 to 22; West Chiverton, 8½ to 9½; Wye Valley, 1½ to 2; West Wye Valley, 2½ to 3; Chontales, 7s. 6d. to 10s.; Eberhardt, 6¾ to 7¼; Flagstaff, 15s. to 20s.; Richmond, 12½ to 13.

TUESDAY, JULY 16.—Market continues very quiet, and prices are about the same as recorded yesterday. [any change.

WEDNESDAY, JULY 17.—There is very little doing, and prices are again without

THURSDAY, JULY 18.—Market very quiet. Van, 20 to 21; West Tolgus, flat at 50 to 55; Dolcoath, weaker at 27 to 29; D'Eresby Mountain, 80 to 100; Great Laxey, 17½ to 18½; South Condurrow, 11¼ to 11¾; Tankerville, 3 to 3¼; South Frances, 2¾ to 3; Leadhills, 3¾ to 3½; Roman Gravels, 7½ to 7¾; Grogwinion, 3 to 3½; D'Eresby Consols, 10 to 11; East Van, 3¾ to 4; Rookhope Lead, 17s. to 19s

FRIDAY, JULY 19.—Market quiet, tin shares weaker. Carn Brea, 38 to 40; Dolcoath, 27 to 29; Tincroft, 8 to 9; Agar, 3¼ to 4; Van, 20 to 21; East Van, 3¾ to 4¼; D'Eresby Mountain, 80 to 100; D'Eresby Consols, 10 to 11; Leadhills, 3 to 3½; Roman Gravels, 7½ to 7¾; Great Laxey, 18 to 19; Tankerville, 3¼ to 3½; Glenroy, 12s. 6d. to 13s.; West Tolgus, 52½ to 55

Mining Correspondence.

BRITISH MINES.

ABERLLYN.—John Roberts, July 17: We have now cleared and secured the deep adit a distance of 45 fms. from the mouth, and made it ready for laying the tramway up to that point. You saw by my sketch of the level, which I sent you last week, that the main level is driven away from the lode, and that in cross-cutting to find the lode and the winze from the middle they went 10 fms. further north than the winze, and so drove back again that distance to effect a communication; as the level in that place is very small, and requires re-making, I would recommend driving a new level from the main level direct to the winze. All the stuff from the upper part of the mine for some time will pass through that winze, and it will be a great saving in the end, and I would not say it would not be from the beginning, to do what I suggest, as it is most important to have a good level to bring out all the stuff from the mine. I am anxious to push on the clearing of this level and the putting in of the tramway as fast as possible, so that we may begin not only to explore the mine, but to operate on the large course of blende on the great Gorse lode. I am fully convinced that this mine in a short time will not be second even to D'Eresby Mountain. I send by this post for your approval my proposed plan and sections of the tramroads, incline, &c., which work I should like to get forward with before the winter sets in.

ASSHETON.—George Rickard, July 18: The 50, east of boundary shaft, is opening tribute ground. No. 1 pitch over the 50, east of boundary shaft, is working at 60s. per ton for lead. No. 2 is set at 100s. per ton. No. 1 pitch below the 50, east of boundary, is set at 80s. per ton. No. 1 pitch below the 50, west of Browne's, is not yet set. Men are engaged in holing a piece of ground to ventilate this and another pitch to the east of said shaft, which also is not yet set for the next two months. No. 1 pitch over the 40, at Browne's, is working at 120s. per ton for lead. No. 1 pitch over the 20, east of Browne's, is working at 120s. per ton for lead. No. 1 pitch over the 50, west of Mawr, is set at 110s. per ton for lead. No. 1 pitch over the 20, south of Mawr, on north and south lode, is working at 120s. per ton for lead and 40s. per ton for copper ore. No. 2 pitch over the 20, south of Mawr, on north and south lode, is set at 80s. per ton for lead. No. 2 pitch below the 20, south of Mawr, on north and south lode, is set at 85s. per ton for lead. All the pitches have 15s. per ton for blende.

BEDFORD UNITED.—R. Goldsworthy, Wm. Phillips, July 18: Saturday last was our pay and setting, and we beg to hand you the following report:—To drive the 138 east by four men, at 11*l.* per fathom; the lode has a very promising appearance, now worth 9*l.* per fathom. To drive the 127 east by six men, at 10*l.* per fathom; the lode has very much improved, now worth 9*l.* per fathom; and judging from its appearance we expect to find it more valuable the next time it is taken down. To sink the winze in the bottom of the 115 east by nine men, at 12*l.* per fathom; here we have a lode 5 ft. wide, the ore-bearing part being 2 ft. wide, worth for mundic and copper 10*l.* per fathom for length of winze. To rise and stope the back of the 103 west by four men, at 4*l.* 15s. per fathom; the lode is worth 6*l.* per fathom. The lode at the engine-shaft, sinking below the 138 fathom level, still maintains its former size and value—1 ft. 6 in. wide, worth 10*l.* per fm. We consider the prospects of the mine still very encouraging.

BETTWS-Y-COED.—H. T. Haley, July 15: The lode in the shallow adit, east and west of air-shaft, continues to open out well; the lode is composed of very nice gossan, spar, a little mundic, stones of blende, and lead ore to the value of 30 and 40 cwts. respectively. The sinks in bottom of this level and deep adit east are without any material change since my last. The masons are making fair progress in building engine-house, &c. From the general appearance of the lode there can be but little doubt that we shall have a good mine, and when the machinery is completed we shall be able to make good returns of lead ore.

BLAEN CAELAN UNITED.—J. Pell, July 17: Sinking the engine-shaft has been greatly impeded by water. I have ordered a lift of pumps from the foundry before cross-cutting through the lode at the 30. We have been putting in air-pipes to the 30 east and west, the air being too bad for progress. The 30 east is driven 3 fms. 5 ft., worth 20*l.* per fathom, and the 30 west 4 fms, worth 25*l.* per fathom. We have put men from the shaft to cross-cut north through the lode in the 20, and they have driven 3 fms. 2 ft. without reaching the north wall of the lode. The rise in the back of the deep adit is in good copper and lead, and is daily expected to communicate with the 10 intermediate level. We have not been able to get the machinery to work to recommence crushing, but hope in my next report to say we have done so.

BLUE HILLS.—S. Bennetts, P. Bennetts, July 13: The Pink lode in the 80 east end continues to yield low quality tinstuff, worth about 4*l.* per fathom. The top lode at the same level west is worth 7*l.* per fathom, and in the east end it is worth 7*l.* per fathom. In the winze below this level the lode is worth 8*l.* per fathom. The north lode in the 30 east end is producing tin sufficient to save for stamping, but not of much value.

BODIDRIS.—H. Hotchkiss, July 17: No important change has taken place in any of the drivings. The stope in the 45 is not so good for ore as when I informed you last, but the stope in the bottom of the 30 is equally as rich for ore, and is still going down. I am pleased to say that the lode in the easternmost shaft is looking most promising for opening out another run of ore ground; lode about 10 in. wide, charged with lead ore, and the measures are of the best white bearing limestone. We are saving a portion of the lode stuff for dressing.

BROWNGELLY.—P. Temby, July 18: We are getting down in settled ground where the lode can be seen standing in both ends of the shaft. It is from 5 ft. to 6 ft. wide, composed principally of gossan and quartz. The stratum is granite, and no great distance from the clay-slate. An elvan course appears to be to the north of the lode. I am decidedly of opinion that rich bunches of copper ore will be found within a few fathoms of the surface, and I think there are fair grounds to hope for a great success.

CARON.—John Kitto, July 12: There has been no great change underground since the date of my last report, as both ends which are being driven at the 10 (the one east of new engine shaft and the other west from the old shaft) have been carried on in the rock by the side of the lode in order to facilitate as much as possible the completion of communication between the points, the air in both places being very deficient, but I hope to get a hole through in a week or ten days' time, when perfect ventilation will be secured. The large wheel for pumping, drawing, and crushing has been erected and painted, and crushing mill fixed, and all the other machinery for dressing, &c., is in a forward state and will be ready to work by the time stated in the estimate.

COMBMARTIN.—T. Harris, T. Comer, July 13: To-day being our monthly setting we have let the following bargains. The 15, to drive east of Harris's shaft, by four men, at 6*l.* per fathom the month. The lode is about 4 ft. wide, containing large bodies of quartz, spotted with good stones of lead and blende, and stringe of mundic—a strong looking lode. The adit level cross-cut to drive north, by four men, at 4*l.* 5s. per fathom the month. The killas is of a larger character than we have hitherto met with, and which is looked upon in this district as a very favourable feature of meeting with favourable deposits of lead.

— The lode in the 15 east is without change. In the adit cross-cut in the last 6 ft. driving we have intersected branches of quartz containing lead and blende, with veins of mundic from 1 to 2 in. thick. These branches are dipping towards the lode, which we believe to be a good indication of meeting with a good lode shortly.

DE BROKE.—J. Phillips, July 17: Wilson's engine-shaft is about 8 fathoms below the 45; the lode is about 3 ft. wide, producing good stones of ore. The 45, driving east of Wilson's, is in a part of the lode, composed of killas, spar, and sulphur, and getting very wet. The lode in the 25, driving east of Wilson's, continues to produce rich patches of solid ore, and still looks very kindly. The different stopes are quite up to their usual yield, but as the dry weather prevents our crushing as much stuff as we can raise I have for the time reduced the stoping force. I sampled 20 tons of lead ore on Saturday last. Dressing, as you may expect, is going on slowly.

D'ERESBY CONSOLS.—John Roberts, Wm. Bennetts, July 17: The tramway is now in to Owen's lode, and the men are cutting down a corner to get the road around. We expect with good speed to get it all completed up to the shaft against next Saturday week. The men in the end, on Owen's lode, have been clearing out the stuff, which has been lodging from the commencement of driving for want of a road, and hence no change to report. The lode driving south, on Gorse heading, is about 1 ft. wide, composed chiefly of spar and mundic, and letting out water freely—a kindly lode. We hope before another report for your meeting that we shall have commenced driving towards Cobbler's lode, the cutting of which being the prime object of the company. We can scarcely conceive how we should not meet with a splendid course of ore and lay open a fine piece of lead ground when this lode is cut, seeing the large quantities of lead that have been raised and sold from the shallow points, and down as far as they could for the water. We shall also commence to drive north again on the Gorse heading.

D'ERESBY MOUNTAIN.—J. Roberts, Wm. Bennetts, July 17: The lode in the No. 1 adit is still squeezed, but still producing some fine blende. The lode in No. 3 is about the same size as last week; it is not so good for lead, but a great deal more of blende has come into it. There is a leader of lead coming in at the right hand, which is likely to take the place of the blende as it has done before. In No. 4 the value of the stope is gradually declining as we are getting near the surface. In No. 5 we have a long stope of debris between the No. 3 and No. 2 shafts to put away in order to let the water sufficiently proceed beyond the former, which we are pushing on as fast as possible. We will send a full report next week.

DUBBY SYKE.—William Tallentire, July 12: The driving west from rise has produced very nice ore this week; the vein is 5 ft. wide, and the ore is in solid lumps coated over, hence it is not easy to estimate its value. We shall commence dressing ore next week, when its real value will be seen.

EAST DARREN.—July 17: The cross-cut south at the 80 has been driven during the past month 3 fms. 6 in., through hard ground, composed of beds of grit, and we are daily expecting to intersect the south branch or part of the lode. The cross-cut south at the 92 has been extended 2 fms., through stiff ground. At this point we have about 15 fms. to drive to intersect the south lode. The winze under the 80 west of cross-cut, on south lode, is now down 5 fms. 2 ft., the lode being 5 ft. wide, worth 10 cwts. of lead ore per fathom. The stopes and pitches throughout the mine continue to yield their usual quantities of ore. The machinery throughout the mine is in good repair, and we are progressing satisfactorily towards another sampling.

EAST VAN.—W. Williams, July 17: Tempest shaft is down 13¼ fms. The ground is rather spare for sinking, but we hope to be deep enough to commence crossing for the lode in three weeks from this date.

GAWTON COPPER.—G. Rowe, G. Rowe, jun., July 13: The part of the lode carried in the 117, east of engine shaft, is 5 ft. wide, producing mundic and good stones of ore. The lode in the winze and stope below the 105 is looking well, and worth 30*l.* per fathom. The lode in the rise and stope in the back of the 105 is worth 15*l.* per fathom. The lode in the winze sinking below the 95 is worth 9*l.* per fathom. The tribute department is without change.

GOGINAN.—July 17: The lode in the pitch over the 130, east and west of the western shaft, continues about 9 ft. wide, producing 13 cwts. of ore per fathom. The pitch over the 130 fm. level, 35 fathoms west of Bryn Pica shaft, is worth 18 cwts. of ore per fathom, but is nearly worked out to the 110. The lode in the pitch over the same level, 65 fathoms west of Bryn Pica shaft, is yielding 16 cwts. of ore per fathom. In the pitch over the same level, 15 fathoms west of the western shaft, the lode is worth ½ ton to 12 cwts. of ore per fathom. The three pitches over the 100 are producing on an average 11 cwts. of ore per fathom. The two pitches over the 80 are yielding 10 to 12 cwts. of ore per fathom. The weather is still fine for all surface operations, which are being vigorously pushed forward, but the water is drying up very fast, although we have a good supply in the reservoirs as yet. Samples of 35 tons of good quality silver-lead ore were sent out yesterday, for the sale on July 30.

GREAT WHEAL RODD.—Thomas F. Hosking, July 17: The shaft is now complete as regards its being properly timbered and secured, and have cleaned up the same to the bottom, in order to commence sinking forthwith. The end has been driven about 3 fms. beyond the shaft on the course of the lode, and is continuing to look well; we shall keep two men at this point, but intend to put our attention more particularly to the sinking of shaft; not having any water to contend with, we shall be enabled to sink at a good rate, which I consider, with the prospects we have now before us, will lead to immediate good results.

GUNNISLAKE (Clitters).—Wm. Skewis, J. C. Seccombe: In the 212, both east and west, we have intersected a cross-course, and are now driving to find the lode. The lode in the 200 east is poor. The lode in the rise in the back of this level is worth 6*l.* per fathom. The lode in the 188 east is worth 5*l.* per fathom. The stope in back of this level is worth 6*l.* per fathom. No change in the cross-cut south to notice; we are driving about our usual number of fathoms per month. The lode in the 176 west is worth 9*l.* per fathom. The lode in the 164 west is poor. The stope in the back of this level is worth 6*l.* per fathom. The lode in the 152 west is producing stones of copper ore; saving work. The stope in the back of this level is worth 13*l.* per fathom. The pitches are not looking quite so good.

HINGSTON DOWN CONSOLS.—T. Richards, July 18: Bailey's Shaft: In the 172 east the lode is large and promising, containing capel, quartz, mundic, and copper ore to the value of 15*l.* per fathom. The stope in the back of the 172 east is worth 20*l.* per fathom. In the 160, west of Nicholls' winze, the lode is worth 5*l.* per fathom, and is promising. The cutting of ground for winze plat and sundry other work preparatory to sinking in the bottom of the 160 is in a forward state. In the stope and tribute pitch in the back of the 110 the lode is large and promising. In the deep adit level driving was again commenced on Monday last; the ground is favourable, and good progress is being made.

KIT HILL TUNNEL.—H. Bennett, July 18: There is no alteration worthy of notice. The men are making fair progress in driving.

LADYWELL.—A. Waters, July 17: The 16, south of new shaft, is in a lode 7 ft. wide, worth 15 cwts. of lead ore per fathom; in soft ground. The roof of this level, which we are about to stope, is also worth 15 cwts. per fathom. The new shaft below the adit level, south of this shaft, appears to be entering upon a change for the better. The 20 above adit, north of shaft, is very wet, but does not contain sufficient ore to value. The tribute pitches are yielding ore as for some time past. Our usual sampling of 25 tons of lead ore takes place to-morrow.

LEADHILLS.—A. Waters, July 17: Setting Report: Brow Mine: The stope in back of the 60, south of Glengonar shaft, by two men, at 40s. per fathom, and 10s. per ton of lead ore, worth 30 cwts. per fathom. The stope in the same level, north of shaft, by two men, at 35s. per fathom, and 20s. per ton, worth 18 cwts. per fathom. The 30 cross-cut to drive east towards the side lode lode from a point north of shaft, by four men, at 17os. per fathom; ground of a kindly character. The 20 north, by four men, at 120s. per fathom, and 10s. per ton; a strong, good-looking vein, but without ore to value. The stope in the back of the 20, south of Moffett's winze, north of shaft, by four men, at 55s. per fathom, and 10s. per ton, worth 18 cwts. of ore per fathom. Gripps' adit, north of shaft, by four men, at 100s. per fathom, and 10s. per ton; a kindly lode, but at present not to value. The stope in back of this level north, by four men, at 60s. per fathom, and 20s. per ton, worth 20 cwts. per fathom. The tribute pitch in the said level south, by two men, at 110s. per ton; getting ore to pay good wages.—Muir's Cross-Cut: Gripps' adit cross-cut west, towards the side lodes, by four men, at 160s. per fm.; making good progress. It is expected that the first lode of importance will be cut in about 20 fathoms further driving.—George's Roust Lode: Gripps' adit north, on said lode, by four men, at 120s. per fathom, and 10s. per ton; lode not to value.—Brown's Vein: Jeffrey's engine-shaft to sink below the 55, by six men, at 260s. per fathom, and 10s. per ton. The 55 to drive north of shaft, by four men, at 160s. per fathom, and 10s. per ton; strong lode, yielding stones of ore. The 55 south, by four men, at 150s. per fm, and 10s. per ton, worth 30 cwts. per fm. No. 1 stope, in this level south, by four men, at 60s. per fm., and 10s. per ton, worth 2¼ tons per fm. No. 2 stope south, by four men, at 60s. per fm., and 10s. per ton, worth 25 cwts. per fathom. The stope in the same level, north of Gibson's winze, north of shaft, by four men, at 50s. per fathom, and 10s. per ton, worth 20 cwts. per fathom. The pitch in back of the 30 south, by two men, at 110s. per ton. The pitch in the 10 north, by two men, at 110s. per ton. Gripps' adit to drive south of shaft, by two men, at 130s. per fathom, and 10s. per ton; lode yielding stones of lead ore. The pitch in this level south, by two men, at 110s. per ton.—Raik Vein—Jeffrey's Cross-Cut: To sink a winze below Gripps' adit, south of the cross-cut, by four men, at 80s. per fathom, and 10s. per ton; lode worth 20 cwts. per fathom. Gripps' to drive north of the cross-cut, by four men, at 95s. per fathom, and 10s. per ton; not to value. No. 1 pitch, in back of the said level north, by three men, at 110s. per fathom. No. 2 pitch, below the said level north, by four men, at 110s. per ton.—Raik Vein, Reid's Shaft: Brown's sump, below the 10 (now down 8 fms.), by four men, at 100s. per fathom and 7s. per ton; fine strong lode, with much spar, and worth 30 cwts. per fathom, and improving. The stope in back of the 10, north of No. 1 winze, by four men, at 45s. per fathom and 7s. per ton; worth 2½ tons per fathom. Stope above ditto, north of No. 2 winze, by four men, at 20s. per fathom and 10s. per ton; lode worth 2 tons per fathom. Stope in same level north and south of said No. 2 winze, by four men, at 7s. per ton; lode worth 8 tons per fathom. Gripp's adit, to drive south into Old Raik and Highwork veins, by four men, at 100s. per fathom and 10s. per ton; this end is going forward directly under the old workings, and the lode in hand is at present worth 1 ton per fathom; we expect to find a much more productive lode as we go forward here. Drift to go north of trial shaft, near dressing-floors, by two men, at 40s. per fathom and 10s. per ton; kindly lode, but not to value. Watson's Shaft, to sink below surface, to go down into Old Raik Mine, by six men, at 32s. per fathom; present depth, 43 fms. 2 ft.—Jeffrey's Lode, at Reid's; Gripp's adit north-west, by four men, at 100s. per fathom and 10s. per ton; strong lode. No. 1 stope in this level, by four men, at 60s. per fathom and 20s. per ton; worth 20 cwts. per fathom. No. 2 stope north of ditto, by four men, at 20s. per fathom and 20s. per ton; worth 2½ tons per fathom.—Mill Vein: Pitch in Gripp's, south of Mars shaft, by two men, at 100s. per ton.—Carse's Vein: Pitch below Gripp's, south of Moss shaft, by four men, at 110 per ton.—Glenea Vein: Shallow adit to go east on string, by two men, at 30s. per fathom. We have completed the stack at the smelting-works, and are now building a new length of zigzag flue connected therewith. The work already done here is paying well, in the shape of extra soot or fume caught from the furnaces.

MARKE VALLEY.—W. George, J. Stenlake, July 18: The lode in the 90 driving west is 2 ft. wide, composed of capel, spar, and good spots of copper ore—a very promising lode—but in consequence of the twisty nature of the ground it is not quite so favourable for driving as reported at the meeting. In the 30 end driving west the lode is 2½ ft. wide, composed of gossan, spar, and mundic, with occasional stones of copper ore, but not to value. In the 10 end west the lode is 2 ft. wide, yielding 1 ton of copper ore per fathom. The rise in the back of this level continues to yield for the length carried (12 ft.) 6 tons of ore per fathom. The stopes and pitches throughout the mine are yielding the usual quantity of ore.

MELLANEAR.—J. Gilbert, July 17: The lode in the 40, west of the rise, west of the skip shaft, is 21 ft. wide, and producing good stones of copper ore. Gundry's shaft is down 13 fms. below the 90. The men will now square the ground, put in a sollar in the bottom of the shaft, and commence to drive east at the 100 as quickly as possible. The lode in the shaft is 4 ft. wide, producing very good stones of ore; but there is still a part of the lode standing in the south side that looks very promising, which we shall take down when we begin to drive. The lode in the 90, west of Gundry's shaft, is 4 ft. wide, and producing a little saving work for copper ore. Nearly all the water is drained from this end since we have cut the lode in the bottom of Gundry's shaft. The lode in the 80, west of shaft, is 3½ ft. wide, and worth 3 tons of ore per fathom. The lode in the 70, west of shaft, is 4 ft. wide, and worth 1 ton of ore per fathom, and some good stones of lead. The ground is easy for driving, but the lode is rather disordered; we expect, however, that it will improve again very soon. The lode in the 60, west of shaft, is 3 ft. wide, and worth 3 tons of ore per fathom. The lode in the winze in the bottom of this level is worth 2 tons of ore per fathom. The lode in the rise in the back of this level is worth 2½ tons of ore per fathom. The lode in the 50, west of shaft, is 3 ft. wide, and worth 2 tons of ore per fathom. The lode in the 40, west of No. 2 rise, is 4 ft. wide, and worth 2 tons of ore per fathom. The rise in back of this level, west of No. 1 rise, is worth 5 tons of ore per fathom. The ground is still very good in the 30 cross-cut, south of Gundry's shaft. There is no change to notice since last report in the 100, west of skip shaft. Our progress in driving has been very satisfactory, but so far we have not met with any lode to value. We sampled, yesterday, computed 400 tons of copper ore.

MELYNDWR.—John Kitto, July 12: We have made fair progress during the past month in sinking the new shaft, and the rock is still spotted with lead ore but I have nothing new elsewhere to report you.

MONYDD GORDDU.—J. G. Green, July 17: Owing to the drought, and consequent stoppage of pumping, the water has risen to the 12, and unless we have rain all underground work will be stopped after this week. In the 13 cross-cut north the ground is full of streaks of quartz, &c., such as generally lies in proximity to lodes. In costeaning at surface sufficient has been done to prove beyond a doubt in my mind that the north lode is still ahead of our cross-cut. It has a bearing which makes it quite a caunter to the main lode, and in the No. 2 pit from the hedge it would appear in addition to have a northerly underlie. In the bottom of the said pit the lode has a most kindly appearance, well charged with blende and gossan of a rich character. I am confident this lode will be of great value to the future of the mine. At surface all work is progressing well, the weather being fine and open.

MORFA DU.—T. Mitchell, July 17: The ground in the bottom end is still very hard and troublesome for cutting. I find in examining the ground in the adit level over this place that the former workers had to pass through a similar bar of hard ground before reaching the main bluestone deposit. Our progress in the driving at this point is slow, although we are pushing on with all force possible. We hope, however, to soon get into the bluestone after we pass through this hard bar of ground.

NEW BRONFLOYD.—Thomas Kemp, July 18: No. 3 Shaft, North Lode: In the 121 west we have stripped down the main part of the lode for about 8 fms.; in places it has produced 2 tons of ore per fathom (for the width 8 ft.), but the average yield for the whole length is about 25 cwts. of ore per fathom, the ground being so extremely hard will not admit rapid progress; however, this point is pushed with all energy with so many hands as can be advantageously employed, but when the ground is properly opened out, stulls, &c., put in, it can be removed more expeditiously, and at much less cost, and we shall also be in a position to increase the number of men; in the course of a few days we shall proceed with the drivage west.—Middle Lode: the part of the lode opened on by the 73 end, west of Curtis's cross-cut, carries excellent stones of ore, and from the appearance of the forebreast to-day we ought to have an improvement. In cross-cutting the lode south in the adit east of shaft the part of the lode the men are cutting through is worth from 8 to 10 cwts. of ore per fathom—a very promising lode. The different pitches throughout the mine are about the same value as stated in my last report. The launders conveying the water over the hauling-wheel being in such a rotten state we were obliged to take them down and put up new ones, consequently we had to suspend hauling yesterday and to-day; however, we shall complete this work this evening, when hauling will be resumed. Owing to the dry weather our surface water is very limited for dressing operations. Tenders for the parcel of ore (25 tons) sampled on the 13th inst., will be due at office to-morrow Friday the 19th.

NORTH LAXEY.—R. Rowe, July 17: I was underground at North Laxey yesterday afternoon. The lode in the 84 end is again in disordered ground, and therefore not so productive as reported last week; by measurement the end is up to within 6 ft. of a slide, to the south of which we had in the 60 the best ore ground seen in the mine. The stopes in the roof of the 84 north and south of the shaft are worth about 15 cwts. of lead per fathom. Ore in roof of 73 and ore in sole of 60 are worth about ¾ ton to the fathom. The following are the bargains let for July:—84 end to drive south by six men, at 5*l.* 10s. per fathom; 84 south stope by four men, at 4*l.* 10s. per fathom; 84 north stope, by 12 men, at 4*l.* per fathom; 73 roof stope by two men, at 4*l.* per fathom; 60 sole by two men, at 3*l.* 15s per fathom.

NORTH MOLTON.—Capt. Juleff, July 16: At the No. 4 shaft the mine is sunk to the 112 below the adit, and the level driven west from the shaft 33 fms.; nearly all the distance in a lode varying in value from 6*l.* to 15*l.* per fathom; in the end at present the lode is worth 9*l.* per fathom, with a promising appearance, and the ore of a most excellent quality. This end should be pushed on with all possible speed, so as as to open out stoping ground; there is for nearly 100 fms. in length of ore ground driven through at the 102, over and before the (112) end, consequently we may fairly calculate to open out a very valuable piece of ground in this direction. Considering the 112 as so far proved productive, I should advise sinking the No. 4 shaft to a deeper level at once, to lay open ground for increasing very materially the returns of copper ore. The stopes in the back of the 112, west of No. 4 shaft, are worth respectively:—No. 1, 8*l.* per fathom; No. 2, 7*l.* per fathom; No. 3, 10*l.* per fathom. There is no room to put on another stope in the back of the level between the No. 3 stope and the present end, which is worth 10*l.* per fathom. The 90 is the furthermost end west; here the lode has been improving in size and value; it is about 18 in. wide, and worth 7*l.* per fathom. This is a very important feature, seeing it is going into new ground in this property for near 2 miles in length.

PARYS MOUNTAIN.—T. Mitchell, July 17: I am now come up from the 90 cross-cut south, in which the forebreast is now crossing another branch about 6 in. wide, containing sulphur and copper ore; this is the third branch met with in the last 6 ft. driven. We find some good stones of copper ore in the joint which is going along with the end; and, on the whole, the ground is looking very promising.

PATELEY BRIDGE.—C. Williams, July 18: I am glad to say the discovery in the 30 east, on Rake vein, as reported yesterday, is still holding good, and from all appearances we are entering into a fresh run of ore ground of great importance. The vein at present is over 6 ft. wide, producing large blocks of solid ore weighing from 10 to 17 cwts. in a block yielding 5 tons per cubic fathom. The vein in No. 1 stope in the back of the 30 east is worth 1½ ton of lead ore per fathom. The vein in No. 2 stope in back of ditto, 20 fms. east of engine-shaft, is 4 ft. wide, and worth 25 cwts. of lead ore per fathom. All the tribute pitches are also looking well. Smelting is being carried on vigorously, and good progress is made.

PENHALLS.—S. Bennetts, P. Vian, July 13: The lode in the 70 east end is from 1½ to 2 ft. wide, and worth 6*l.* per fathom. On the same section in the west end it is 5 to 6 ft. wide, and worth 10*l.* to 12*l.* per fathom. In the 60 east end it is worth 7*l.* per fathom. The 55 east on another section of the lode is worth 5*l.* per fathom. There is not much alteration to notice elsewhere.

PENSTRUTHAL.—W. Polkinghorne, July 18: At Highburrow shaft, sinking under the 88, we have intersected another branch coming in from the north, making the lode altogether 7 ft. wide. There is a large quantity of water issuing from this north branch, from which it would appear that there is still more lode standing to the north. Altogether the appearances of the lode are highly satisfactory, but as yet it has not much improved for mineral. In the 72, driving west of Highburrow shaft, the lode has improved, being worth 1½ ton of copper ore per fathom—a very kindly looking lode, and every indication for further improvement. In the 72, driving east of Highburrow shaft, the lode is still without change. In the cross-cut driving south from the 46, west of Highburrow shaft, we have not met with anything since last report.

PICTON.—John Woolcock, July 16: Since my last report of July 2 we have been progressing with the erection of the engine and machinery for winding and crushing, and the erection of the head-gear on the top of the shaft, and unless some unforeseen occurrence takes place we expect in three weeks to start the engine to wind from the main shaft. The workings in the different levels have been rather retarded by the surface preparations in connection with the machinery, but the lead is showing itself in fresh places, and opening out better and better.

PRINCE OF WALES.—John Andrews, July 17: The lode in the deep adit, west of Vigar's shaft, is still small and poor.

RED ROCK.—J. Kitto, July 12: The water has been in the bottom of the mine for some days past, on account of not having sufficient surface water to drive the pumping-wheel at full speed, consequently we have not made so much progress in driving the 72 fm. level east towards the new run of ore ground, or intersected the producing part of the lode as I expected we should have done, and rain is badly wanted. The new discovery in the 10, west of the eastern shaft, is turning out well; we have stripped down the lode for 7 feet wide, and it contains good ore throughout. We have not yet reached the south side, so that I am at present unable to give you its full width; at any rate it looks well, and promises to be a very important discovery. The stopes and tribute pitches are yielding a full average quantity of ore, but for want of sufficient water to draw with the mine is full of leadstuff, and many of the men are consequently idle. We have a great deal of ore broken above and below ground, and if we had water to draw and dress with we should have sampled another 40 tons ere this. It looks more likely for rain at present, and if it comes we shall have a parcel ready in a few days.

ROMAN GRAVELS.—A. Waters, July 17: The 110, north of new shaft, is worth 1 ton of lead ore per fathom. The 110 south is also worth 1 ton per fathom. The 95 south is worth 2 tons per fathom. The winze below the 95 north, near the junction of the caunter lode, is worth 3 tons per fathom, and improving as we go down. The 80 south is worth 3 tons per fathom. The 65 south is worth 2 tons per fathom. There is no change in the 40 south since my last report. The stopes throughout the mine are yielding their usual quantities of lead ore. To-morrow we shall sample 180 tons of lead ore for sale next week.

ROOKHOPE.—T. Davidson, July 18: Some of our workings over the 42 fm. level are not looking so well this week. Where we have eight men cutting vein sides the place has grown much harder and poorer; and as this is the setting week end, I contemplate making some changes in the workings. The rise we are putting up from adit level improves a little as we advance, and I think about another 2 fms. will bring us to the same random as where we have ore further east. The opening drift west from the old rise is looking very well. Indeed, this is the best place at present in the whole mine. The other end going east has only been poor; but as there was good ore underneath all the way to boundary end, we must try further. We have nearly got all the dams completed; a few days will finish them. But I am sorry to say there is no water to put into them. The springs are about dried up, and we can get little done on the dressing floors. This is going to tell considerably on our ore raising, as we have no water to serve us during the daytime. In consequence, we cannot keep the machinery going, or keep our stock of boys in full employment. I hope there will be a change soon.

ST. HARMON.—John Kitto, July 12: There has been no further change in the 48 cross-cut south since the date of my last report. The lode in the 67 driving east is looking better than it has for some time past, and is yielding a little ore, and the stope above the 35 has improved, and is now producing more lead than ever it did before, with a prospect of further improvement, but there is nothing else new in any other part of the mine. The machinery is all in excellent working condition.

SAINT PATRICK.—Wm. Francis, July 17: We [illegible]ery congenial ground still in driving the 120 yards cross-cut north in the cross-course, which is over 3 ft. wide, composed chiefly of clay and spar, and occasionally good stones of lead ore, interspersed with tuffy stone and boulders of limestone. The 90 yards cross-cut north in the chert progresses favourably. I expect to have an important change here soon.

SOUTH CONDURROW.—W. Rich, W. Williams, H. Abraham, July 17: The 93 end east is worth 15*l.* per fathom. The 80 end east is letting out more water, and looks likely to improve. The 70 west has a promising appearance: the end is worth 8*l.* per fathom. The rise in the back of the 70, east of the cross-cut, is worth 12*l.* per fathom. The 50 west, towards Plantation shaft, is worth 8*l.* per fm. The 50, west of middle cross-cut, yields a little tin. The 50, east of King's, is worth 7*l.* per fathom. The lode in the winze in the bottom of this level is worth 9*l.* per fathom. The 40 east carries stones of tin. The 40 west is worth 7*l.* per fm. We have sampled this week about 20 tons of copper ore.

SOUTH DARREN.—H. James, July 17: The water in Bishop's shaft is forked down to the roof of the 100 fm. level. The wheel does good duty in forking in the daytime while the water is being let off from the East Darren reservoirs to drive their machinery and carry on dressing, but at night, when the dams are shut, there is scarcely sufficient coming to keep the wheel going at the required speed. The shaftmen are at present engaged drawing water and stripping the lode off the side in the 90 fm. level, &c. The lode in the 90 end has fallen off a little in value, worth at present 30*l.* per fathom. The winze sinking below this level is looking well, worth 35*l.* per fathom. No. 1 stope, in the back, is worth 28*l.* per fathom. No. 2 stope is now worth 30*l.* per fathom. The 80 forebreast is still unproductive. No. 1 stope, in the roof of this level, is worth 20*l.* per fathom. No. 2 stope is worth 8*l.* per fathom. The weather continues to keep very dry, and much against our dressing operation.

SOUTH MOLTON CONSOLS.—T. May, July 18: I am glad to report a change in the ground in our cross-cut adit level, which I consider a good indication for mineral in the lode when cut.

SOUTH TOLCARNE.—William Rich, James Knotwell, July 17: There is very little alteration in the mine to notice since our report of last week. The ground ground continues favourable for driving in the 24 end west and in the 36 east, and good progress is being made.

SOUTH WHEAL FRANCES.—A. T. James, July 17: Pascoe's shaft is being sunk on the south part of the lode, which is producing low quality tinstuff. The main part of the lode is still north, and will be cut through shortly. The 205 west is worth 10*l.* per fathom. The 195 west is worth 12*l.* per fathom. The 185 east worth 10*l.* per fathom. The 175 west is worth 15*l.* per fathom. The 165 west is worth 10*l.* per fathom. The 185 winze is worth 15*l.* per fathom. The mine continues to look well, and the stopes are yielding more than the usual supply of tin. The quantity sold to this date is much in excess of any former period.

TANKERVILLE.—A. Waters, July 18: The fork is completed, the pump fixed and working, shaft cased and divided to bottom, and machine kibble winding out of the 206. The 206 cross cut is driven to a point where rich lead ore is seen worth quite 1¼ ton per fathom, but I do not think that we have yet reached the wall of the main lode. In blasting in the one when I was underground yesterday, we cut an extra feed of water, which led to the drainage of No. 1 winze in the 192, east of Watson's shaft. From this we gather that the branch or lode in the present cross-cut end is not far from the main portion of the great lode. We are pushing on the cross-cut with the utmost vigour, and hope to be able to report on a good run of ore in the course of a few days. Other points as when reported on last week. In consequence of the delay to the winding, caused by having to fix lift, timber shaft, &c., we think it necessary to delay sampling until next week.

TEESDALE.—John Slack: North End Working: We have a considerable improvement here.—East Branch: This working has been going 24 hours daily since July 4 driving the horse level on the vein. The vein bears a fair proportion of lead ore right down and below our soles; we are nearly certain to have a good payable working in this branch for a long time, and I have no doubt it will yield some hundreds of bings of ore. We have it by the end, and can work it to the best advantage. The ground is hard, and we use a good deal of dynamite. I should like to put four more men to sink down into the soles of the level; they would commence getting ore the first day.

TEMPLE.—July 17: No. level is improving, there being, in addition to the blende, good spots of lead occasionally. In No. 2 level the lode has not been taken down during the week. In No. 3 level the lode continues to open out, but has not been taken down during the week, therefore there is little change to notice since the last report was written. At surface all the works are progressing rapidly, the weather being favourable.

TRELEIGH WOOD.—W. Goldsworthy, July 18: The men are making fair progress in sinking the winze below the 44; lode worth 16*l.* per fathom. When this is holed it will lay open a fine piece of ground. I have set the rise, but there is no change to notice in the lode. The pitches continue to send up their usual tin.

TYN-Y-FRON.—E. Jones, July 17: We have now finished cutting open the adit cross cut. We find the south lode to be about 3½ fms. wide, containing a strong mixture of blende, with a good mixture of lead and copper, producing of the former fully 1½ ton per fathom. The eastern level is very similar to the cross-

cent, therefore the cutting it open will prove the lode there as it has done in that level. We are glad to hear you will be with us next week.

VAUGHAN.—July 17: The deep level east has been driven during the past month 2 fms. 5 ft., through a hard part of the lode, letting out water freely, and have now commenced driving more southerly in order to reach under the ore ground passed through in the level. In the stope over the 30 east the lode is large, yielding from 15 to 18 cwts. of blue lead ore per fathom. In the two stopes over the 20 east the lode has fallen off in value, now producing from 5 to 6 cwts. of mixed (white and blue) ores per fathom. At surface the masons are now building the crebin, and the carpenter completing the erection of Zennor's buddle, which we hope to set to work early next week. The machinery is in good order, but our supply of water is gradually decreasing. We sampled yesterday, the 16th inst., 15 tons of mixed (blue and white) silver-lead ore, and are now dressing a quantity of blue lead ore, which we shall sample within a fortnight if our water does not fail.

WEST ASSHETON.—G. Rickard, July 17: There is no change to notice in the cross cut in the 60 west. No. 2 pitch, in the back of this level, is let at 60s. per ton for lead; No. 3 at 30s.; No. 4 not let—has been working at 60s., but will probably let at a little less; No. 5 let at 100s.; No. 6 at 130s. All these pitches have 15s. per ton for blende, and the two latter 40s. per ton for copper ore. No. 1 pitch, in the back of the 50 west, is let at 100s. per ton for lead, and 15s. per ton for blende. No. 2 pitch, in the back of this level, is let at 60s. per ton for lead and 15s. per ton for blende.

WEST CRAVEN MOOR.—David Williams, July 18: In Blackhill adit level the vein in the end has again improved, being at present 6 ft. wide, worth 1 ton of lead ore per fathom. In the stope in the back of the same the ore is of the same value as reported in my last. The new Blackhill shaft is sunk to a depth of 14 fms. below adit, or 44 fms. from surface, the whole of which has been accomplished in 11 months. We commenced casing and dividing on Monday last, and hope to be able to resume driving east and west, to get under the rich ore ground going down in the soles of this adit level, next week. Other points without change to notice.

WEST GODOLPHIN.—J. Pope, July 13: Monthly Report: Caunter: The 80 driving north by eight men; the lode is small; distance worked, 11 fms. 5 ft. 3 in. —Wilson's: The 70, driving west, by six men; the lode is 5 ft. wide, worth 10*l.* per fathom: distance worked, 22 fms. 2 ft. 6 in.; producing tin and copper. The 70, driving west in back of No. 1 stope, by six men; lode 8 ft. wide, worth 20*l.* per fathom; producing tin. The 70, stripping side of level, to six men; we have taken down a piece of the south side of the level for about 6½ fms. long to within 3½ ft of the bottom of the level, varying in width from 2 ft. to 4 ft.; this has produced good quality tinstuff, and it continues to look very well going down, also going west. The 70, driving east, by six men; lode 5 ft. wide, worth 8*l.* per fathom—distance worked 13 fms. 5 ft. 9 in.; producing tin and copper. No. 1 stope in the back of the 70 east by six men, the lode is 5 ft. wide, worth 7*l.* per fathom; producing tin. No. 1 stope in the bottom of the 60 west by six men; the lode is 6 ft. wide, worth 10*l.* per fathom; producing tin. No. 2 stope in the bottom of the 60 west by six men; lode 4 ft. wide, worth 6*l.* per fathom; producing tin. No. 3 stope in the bottom of the 60 west by six men; the lode is 4 ft. wide, worth 6*l.* per fathom; producing tin. No. 4 stope in the bottom of the 60 west by six men; the lode is 7 ft. wide, worth 10*l.* per fm.; producing tin. No. 5 stope in the bottom of the 60 west, by six men; the lode is 8 ft. wide, worth 10*l.* per fathom; producing tin. No. 6 stope in the bottom of the 60 west by six men; the lode is 5 ft. wide, worth 8*l.* per fathom; producing tin. No. 1 stope in the back of the 60 west by four men; the lode is 3 ft. wide, worth 5*l.* per fathom; producing tin. Sinking winze in the 60 east by six men; lode 3 ft. wide, worth 5*l.* per fathom; producing tin; we calculate to hole this winze this week. No. 1 stope in bottom of the 60 east by six men; lode 7 ft. wide, worth 10*l.* per fathom; producing tin; there is more lode standing in the sides of this stope, which we shall have taken down soon after the winze is holed to the 70. One pare of men are stoping the back of the 70, where the new shaft will come down on Wilson's lode, and as soon as the eastern winze is holed to the 70 we shall put the winzemen to stope in the bottom of the 60, where we shall start the shaft so as to get this in readiness against we have a communication from the 70 to the 80 on Wilson's lode. We had a pare of men in the early part of this month putting our drawing shaft in thorough repair; these men are now engaged putting tramroad in the 70 on Wilson's lode, and fixing shutes in the winzes for filling the wagons. I think they will complete that next week, when we intend putting them to take down some ground in the 60 preparatory to fixing the flat-rods; as soon as that is completed we shall put them to cut ground for the bobs, &c. I will send a rough sketch of bobs, &c., to the office as we intend to fix them, previous to the next committee meeting. We shall commence selecting the best of our flat rods, and commence getting them in order in a few days. We shall sell about 8 tons of tin to day, and expect to sell about the same quantity on Tuesday next. I will telegram the amount from Hayle. We shall also sample our copper the same day.

—John Pope, July 17: No. 1 winze in the 60 east on Wilson's lode is communicated with the 70. The men that were engaged sinking the winze are now stopping a piece of ground in the end of the winze for fixing a shoot for filling the tram wagon. The other places are just as last reported on. We sold for the month 16 tons 1 cwt. 1 qr. 1 lb., at 33*l.* 12s 6d. per ton. Copper ore sampled yesterday (computed weight), 26 tons; precipitate copper, 2 tons.

WEST PATELEY BRIDGE.—D. Williams, July 18: No. 2 Shaft: In the 26 east the ground is a little easier to work, and the vein is gradually improving in size and value, and the end is at present very favourable for a good course of ore. In the 26 west the vein is much the same as reported in my last. In the 20 east the vein is 3 ft. wide, and producing occasional stones of ore. I hope to be able to resume driving the 32 east and west upon the vein in a few days.—Craven Cross Shaft: Good progress continues to be made in sinking the north shaft; during the week we have raised several large rocks of solid ore, which must have come off the main lode. I daily expect the connections to arrive here to enable us to commence hauling with the engine. In the end of the 63 the vein is 2 ft. wide, and composed chiefly of spar, with branches of lead ore. A stope in back of the level, in a vein 4 ft. wide, worth 25 cwts. of ore per fathom. Other points without any change since my last.

WEST ROSKEAR.—H. Stephens, W. Bennetts, July 18: The lode in Stephens's shaft sinking below the 12 is large, containing a good mixture of copper and blende —an exceedingly promising lode. We are carrying more than 5 ft. of the north side, and will cut through it in places as we get deeper. The lode in Lanyon's shaft sinking below the 12 is fully 3 ft. wide, producing saving work for copper, with good indications for early improvement. We are preparing the steam whim for drawing the stuff as fast as possible in order to open out the lodes at several other points. We hope to get ready to draw from the sump early in next week, which will enable us to lay open ground at the 24 fm. level and prepare for going deeper.

WEST WHEAL TOLGUS.—July 17: The lode in the rise in the back of the 145 (on the north part of the lode) is 4 ft. wide, yielding 2½ tons of ore per fathom; we reckon on holing it to No. 2 winze before Friday (setting day); we shall then set the end to drive west again. The south part of the lode in the 145 driving west is better than when last reported; it is 4 ft. wide, yielding 5 tons of ore per fathom; it is a strong fine-looking lode. The stopes in the back are looking very well. The lode in the rise in the back of the 135 is yielding a little ore; we hope to communicate this rise with No. 6 winze below the 125 by Friday. No. 2 winze is nearly holed to the rise from the back of the 145. The lode in No. 6 winze below the 125 is producing a little saving work. The lode in the 125 west is small, and spotted with ore, but nothing to value.—Richards' Shaft: There has not been any of the lode taken down since our last report. The lode in the 65 end west is very small, only just dividing the ground. The same may be said of the 75 end west. We should hope there would be some change in these ends soon.

WEST WYE VALLEY.—John Kitto, July 13: The improvement referred to in my last report in the 40, driving east of Brooke's shaft, did not continue long, but was suddenly cut off by a cross branch, but I am glad to say it has just as suddenly come in again, and the end is now yielding good ore and looks likely to continue. The winze sinking below the 40 is in a good course of ore, worth at least 2 tons to the fathom, but this, together with all deeper workings, are for the present suspended on account of not having sufficient surface water to keep the mine clear, but we have had some rain and I hope to have everything going again by the middle of next week. The dressing of ore has likewise been suspended from the same cause, or we should have sampled another 40 tons ere this, but our reservoir is quite empty, although it is a large one, and we are now depending entirely upon rain-water to enable us to both draw the lead stuff and dress it. We shall, however, sell another parcel as soon as ever we can get the stuff already broken dressed up, and I hope that will not be many days hence.

WHEAL CREBOR.—John Andrews, July 15: The following was our setting on Saturday:—To drive the 120 end east by four men, at 7*l.* per fathom; the lode is 3 ft. wide, worth 8*l.* per fathom. No. 1 stope, in back of the 120, by six men, at 3*l.* 8s. per fathom; the lode is 4 ft. wide, worth 6*l.* per fathom. No. 2 stope, in back of the same level, by six men, at 4*l.* 10s. per fathom; the lode is 5 ft. wide, worth 15*l.* per fathom. To drive the 168 east by two men, at 6*l.* per fathom; the lode is small and poor. To drive the 72 east by two men, at 5*l.* 8s. per fathom; the lode is 4 ft. wide, and, on the whole, is looking a little more promising, but as yet is of no value. To drive the 48 east by two men, at 6*l.* 10s. per fathom; the lode is 4 ft. wide, but unproductive. To sink the new shaft below the surface by nine men, at 15*l.* per fathom; the part of the lode we are carrying here is poor, but I think the main part is still further north.

WHEAL GRENVILLE.—T. Hodge, July 16: The following bargains were set on Saturday last for two months. Goold's shaft to sink below the 150 by 12 men, at 25*l.* per fathom; the shaft is 5 fms. 2 ft. below said level on the old lode. The 140 to drive east by six men, at 10*l.* 10s. per fathom. To stope the back of said level by six men, at 8*l.* per fathom. The 140 to drive west by four men, at 11*l.* per fathom. The 160 to drive east of the western shaft by six men, at 12*l.* per fm. To shoot down a piece of lode in the bottom of the 160, per bargain, by six men, at 20*l.* To stope the bottom of the 150 by 12 men, at 8s. 9d. per ton. The 140 to drive east by six men, at 10*l.* per fathom. Five stopes in the back of the 150 east by 32 men, at 6s. 6d. per ton. The stope in the back of the 150 west is set to four men, at 6s. 9d. per ton. To stope the back of the 140 east by four men, at 7s. per ton. The 140 to drive east by four men, at 9*l.* per fathom. The 130 to drive west by two men, at 7*l.* 10s. per fathom. I see no change in the value of the bargains since my last.—Tribute: Nine pitches were set to 24 men, average tribute 11s. 5d. in 1*l.*, to be paid 37*l.* per ton for black tin.

WHEAL KITTY (St. Agnes).—Stephen Davey, Richard Harris, July 13: We have no change worthy of special remark to communicate this week. The points in the aggregate are the same as last week.

WHEAL NEWTON.—H. Bennett, July 18: The lode in the 40 end east is looking very promising. The lode in Bennett's shaft is very kindly producing good stones of silver-lead. All other points are without change to notice.

WHEAL PRUSSIA.—W. Tregay, July 18: This mine is looking well, the lode in the shaft improved, and all other points quite up to last report.

WHEAL UNY.—Wm. Rich, M. Rogers, July 15: Hind's engine-shaft is down nearly 12 fms. below the 160. We shall shortly begin to drive at the 172; the lode in the bottom is worth 10*l.* per fathom. The rise in the back of the 160 west is holed to the 150, and the men set to drive the 160 end west; the lode in the end is worth 9*l.* per fathom. The 160 fathom level end, east of Gooding's, is unproductive. The 150 end west is worth 6*l.* per fathom; the rise in the back of this level is worth 12*l.* per fathom. The 150 end, east of King's, is worth 8*l.* per fathom. The rise in the back of the 150 east is worth 12*l.* per fathom. The 140 east is poor. We have began to sink a winze in the 130, west of incline shaft. The 130 east is worth 8*l.* per fathom.

WYE VALLEY.—John Kitto, July 13: There has been no further change in the 46, driving east, since the date of my last report, but the 29, driving towards Tippett's shaft, has yielded more ore than for months past, and still looks promising for further and speedy improvement. The winze sinking below the 32 is still looking well in going down, and is yielding very good ore; and when the 46 reaches this point it can scarcely fail to be very productive. The tribute pitches are yielding fairly well, and may be the means of discovering fresh bunches of ore. Since my last we have sold to Messrs. Nevill, Druce, and Co., 25 tons of lead ore, at 9*l.* 17s. per ton, and we are now getting another parcel ready for market.

PARK VALLEY SILVER-LEAD MINE.

July 4.—The discovery of this mine, which is situated in the Park Valley, near the village of Bow, in the north of Devon, was made by the landowner while in the usual course of his agricultural pursuits, and to whom, as well as to his neighbours, the heavy stones of silvery shining ore were a source of surprise and gladness. They soon resolved to utilise the discovery, and proceeded to drive an adit level to drain off the water from the lode, but owing to the very gentle acclivity of the surface they could by these means attain a depth of 5 fms. only. Here, however, they found the mineral which they had discovered with the plough continuing downward, and increasing in richness, and from this very shallow depth those agriculturists raised and sold many tons of silver-lead ore.

To follow the mineral below the adit level, however, required the application of steam pumping appliances, and the skill of other men; hence the possession of the mine by the present company, who, on taking the property some few months ago, proceeded to put the adits and shafts into proper working condition, and after raising a few tons of the mineral to satisfy themselves of its quality, decided to provide the necessary machinery, and to sink a new shaft to intersect the mineral some 20 fms. deeper. With this work I am pleased to report we are making very rapid progress, having purchased and fixed at the mine a portable engine and house, with pumping and winding machinery, wire-ropes, &c., connected thereto. We have also sunk the new engine-shaft 10 fms. from surface, being 5 fms. below the adit level. We are well timbering and securing the shaft as we sink, while for raising the water from it we have a 6-inch drawing-pump fixed therein, and have a sufficient length of the same size pump on the mine to take us down 20 fms. deeper. The whole of the machinery and work are paid for, and we are now in a fair course of pushing onward with our sinking towards the first stage or 10 fm. level, which we hope to reach about two months hence. At that depth the shaft will be, according to the underlie of the lode at the adit level, 5 fms. to the east of the lode. Through this distance we shall cross-cut to it, and this work will occupy another month. We may, therefore, calculate that within three months we shall open the lode 10 fms. deeper than it has ever been before, and at a point, too, almost directly underneath where it is productive at the adit level.

To practical miners, therefore, and indeed to all others whose conclusions are drawn from analogy, I need not say that we are looking forward to very satisfactory result, and that we are already beginning to anticipate cutting a rich lode at the 10. As soon as this is accomplished we shall proceed with the sinking of the engine-shaft to the 20, at which depth the shaft will pass through the lode, and where also we shall open levels on its course. To accomplish this both speedily and economically I promise you that no efforts shall be wanting, and having seen so much of the property I have now no hesitation in saying that during my long experience of mines I have met with but very few whose explorations have been attended with such promise of highly satisfactory results as are those of the Park Valley Mine. W. H. HOSKING.

July 9.—I have read the foregoing report on the Park Valley Silver Lead Mine, and having been a resident in the immediate neighbourhood the whole of my lifetime, now 76 years, I can fully confirm all that is stated therein as to the discovery of the lead and the selling of the mineral by the farmers with whom I held a small interest, being at the time purser and secretary. Our operations were stopped by the inflow of water, to remove which we had no machinery. Now, however, that a steam-engine for pumping is erected I take an interest in seeing the thing properly developed, as I feel confident that a continuation of the lead which we raised so near the surface will yield profitable results by being followed in depth, as it was in that direction we found it increasing in richness, and were obliged to leave it.—JOHN BIBBINGS.

HYDRAULIC OPERATIONS ON THE DEEP GRAVEL LEAD.

PRINCIPAL MINES ON THE SOUTH YUBA.

Mining on the deep gravel deposits of The Ridge in Nevada county, of which mention has been made in a previous article published in the Bulletin, has assumed gigantic proportions. The work previously laboriously performed by the pick and shovel in the hands of the placer miner is now accomplished by water and powder, and on a scale compared to which the operations of the former implements were simply puny. There is no branch of California industry which has made such vast progress as that of hydraulic mining. The canvas hose has been exchanged for sheet-iron pipes 20 and 22 in. in diameter, sustaining a pressure of water in many instances of over 300 ft. fall. The 1 and 2 in. nozzles and copper pipe have been displaced by the "little giant" or monitor, with its 7 and 10 in. nozzle. The volume of water handled has swollen from a few hundred miners' inches to as many thousands. The quantity of earth removed during a working season now runs up to hundreds of thousands of cubic yards in bulk, with a superficial area measured in acres.

PRINCIPAL MINES ON THE RIDGE.—The principal hydraulic properties on The Ridge are located on the banks of the South and Middle Yuba. It is on the banks of these streams that the hydraulic mines owned by the Excelsior, the Eureka Lake and Yuba Canal, and the Blue Tent and North Bloomfield Companies are situated. The Excelsior Mining Company's property embraces the deep gravel deposits in the vicinity of Smartsville, covering an area of 527 acres; of this 150 acres have been worked out. The Eureka Lake and Yuba Canal Company's mines cover a total area of about 3000 acres, and extends in detached sections from Relief Hill to French Corral. The Blue Tent Consolidated Gold Mines comprise 600 acres of the auriferous gravel deposit. These mines are located on the left bank of the South Yuba, immediately opposite Lake City. The consolidation embraces those mines formerly known as the Enterprise, the South Yuba, Gopher, and Blue Lead. At the upper end of a somewhat abrupt bend of the South Yuba, which occurs above the mouth of Gopher ravine, Humbug creek joins the river on the right bank. It is on this creek that the North Bloomfield Mine is situated. The company own an area of 1000 acres on The Ridge. Higher up The Ridge are the mines in and around Relief Hill, Woolsey and Moore's Flats, and other places.

THE GRAVEL DEPOSIT.—The deep gravel deposit of the Ridge varies in depth from 150 to 1000 ft. In the North Bloomfield Mine the bank is about 150 ft. high; the bank exposed at the Blue Tent Mine ranges from 250 to 500 ft., and as the work progresses the height of the bank increases, the channel running into the hill. The depth of the gravel bed at the upper end of the claim will probably reach 1000 ft. At Columbia Hill a stratum of gravel from 200 to 300 ft. in thickness has been stripped and the bed-rock (no bottom having been reached) is probably that depth below. The Excelsior Mines at Smartsville contain a bank of auriferous gravel about 200 ft. in depth. At Quaker Hill, on the road from Nevada City to Blue Tent, a shaft has been sunk in the deposit over 400 ft., and no bottom found, and recently a shaft was bottomed on the Watt's claim above the North Bloomfield Mine at a depth of over 400 ft. with the bed-rock still pitching, showing still deeper ground. The deposit varies in width at different points. In the North Bloomfield Mine it is about 500 ft. At Columbia Hill the Eureka Lake and Yuba Canal Company have washed away about a mile in width of the top stratum. When the Blue Tent Mines are completely developed there will be a solid face of gravel from 1000 to 1500 ft. across. In all the mines on the Ridge the gravel deposit has an almost uniform appearance, the variation in shade being but slight. The upper stratum is deeply discoloured by oxide of iron, and is of a rusty colour to a depth of about 100 ft. At about that depth the reddish tinge abruptly disappears and the gravel assumes a bluish tint. This is the predominating colour to the bed-rock. A close examination of the gravel in the lower stratum explains the cause. It contains iron pyrites. The oxidation in the upper stratum has probably been caused by the percolation of the surface water. Quartz, pebbles, and boulders are scattered freely throughout the gravel. In some places the gravel appears to be formed chiefly of quartz. At such points the deposit is more than ordinarily rich in gold.

AURIFEROUS WEALTH OF THE DEPOSIT.—Although the deep gravel deposit of The Ridge has been but partially developed, enough is known of it to enable its auriferous wealth to be computed; the gold is very evenly distributed through it. Given the area, and the quantity of gold it contains is a very simple mathematical calculation. The Columbia Hill property covers 2½ miles in length of the channel, and an estimate based on the results of operations on it and adjoining claims places the auriferous wealth of the unworked ground at $18,000,000. In the Excelsior Company's mines 8,634,720 cubic yards of ground have been removed, which has yielded $2,925,000. The unworked ground of this company is estimated by experts at 81,000,000 cubic yards of gravel, which is represented by the same authorities to contain $18,400,000. The auriferous wealth of other mining companies located on The Ridge have been similarly estimated, the calculations being based on the results of mining operations.

MAGNITUDE OF HYDRAULIC MINING OPERATIONS.—The magnitude of the hydraulic mining operations on The Ridge is almost incredible. The channel of the deep gravel deposit runs at an elevation of several hundred feet above the bed of the present water courses, yet it is very costly to reach it. At North Bloomfield a tunnel, 8600 ft. long, had to be pierced through the metamorphic slate rim rock to drain the channel, and furnish a tail race for the debris of the company's hydraulic operations. This tunnel cost the company about $2,000,000. All of the tailings of the present workings now pass through it into the bed of the South Yuba. A branch tunnel, 900 ft. in length, to connect with the upper portion of the company's ground, is now being constructed from the upper shaft on the line of the main tunnel. The main ditches and distributors conveying water for hydraulicing in the North Bloomfield Mine are 55 miles in length, and cost about $500,000. During the present season about 4000 miners' inches of water have been used. This passes through two pipes, with 7 and 8 in. nozzles, with a pressure of 380 ft. Ninety men are employed in the mine, 40 of whom are Chinese, and work is continued without interruption throughout the 24 hours, large bonfires of pitch fire being used to facilitate operations at night. The company's last report shows that 2,293,930 cubic yards of gravel was removed, and 595,000 24 hours miners' inches of water used during the 12 months ending Oct. 31, 1877. The workings of North Bloomfield Mine present the appearance of a deep chasm, 1000 ft. in length and 500 ft. across, cut into the flank of the range.

The Eureka Lake and Yuba Canal Company have been compelled to run a tunnel 2500 ft. in length to furnish an outlet into the South Yuba valley for the tailings of the bank of top gravel, which is now being worked off in the Columbia Hill Mine. It is calculated that a tunnel 10,000 ft. in length will be necessary to enable the company to work the channel in this mine. In the same mine a sluice 6200 ft. long and 8 ft. wide, with a grade of 5½ in., has been constructed to work off the top gravel. The tract known as the Bloomfield claim, belonging to the Eureka Lake and Yuba Canal Company, will require a tunnel 6000 ft. in length to reach the bottom of the channel. These long tunnels will have to to be bored, like those now in use, through the solid rock. During the present season 4000 miners' inches of water has been steadily used in that portion of the Columbia Hill Mine tailing through the tunnel. This is discharged through two monitors, one having an 8-inch and the other a 10-inch nozzle. Two of the Blue Tent Consolidated Company's mines—the South Yuba and the Blue Lead—are operated through two tunnels. One of these runs 580 ft. through the rim rock—the other 350 ft. These tunnels emerge from the left bank of the South Yuba 700 ft. above the surface of that stream. The Smartsville Mining Companies, included in the consolidation known as the Excelsior Water and Mining Company, have spent nearly $500,000 in bed rock tunnels, of which there are six, whose aggregate length is 13,350 ft.; $75,000 in water pipes for the conveyance of water to the claims, and at least $200,000 in the construction of flumes, and for monitors and other mechanical appliances. The Excelsior ditches aggregate 115 miles in length, and have a capacity of about 6000 miners' inches. They have been constructed at a cost of $1,000,000.

COST OF WORKING THE DEEP GRAVEL DEPOSIT AND THE YIELD OF GOLD.—From the records kept by the Blue Gravel Mining Company at Smartsville, now embraced in the Excelsior Water and Mining Company consolidation, gold valued at $805,808·87 was extracted from its ground during the period between March, 1864, and August, 18·8, at a cost of $259,308·87, leaving $546,500 as the net profit. The Babb, Pactolus, Cement, and Big Ravine claims, also in the same consolidation, yielded from August, 1873, to March, 1875, the sum of $222,076, at a cost of $132,076, leaving a net profit of $160,000. The claims now owned by the Excelsior Water and Mining Company, at Smartsville, removed between the years 1864 and 1873, 8,634,720 cubic yards of gravel, which yielded $2,925,000, or 34 cents per cubic yard. From 1873 to 1878 these claims have used 3,400,000 miners' inches of 11 hours water, which produced $1,420,807, or 41 8-10 cents per miners' inch of water employed. The Blue Tent Consolidated Mining Company, whose mines are among the most economically worked on The Ridge, under the superintendence of D. T. Hughes, and the general management of Prof. Thomas Price, removed during the period between Nov. 1, 1876, and Dec. 31, 1877, with 320,430 in. of 10 hours per day water, 1,398,983 cubic yards (equal to 2,518,133 tons of 2000 lbs. each) of top gravel, which yielded at the rate of nearly 9 cents per miners' inch. This bank of top gravel ranged from 150 ft. to 300 ft. in height, and contained considerable barren pipe-clay. During the same period 553,376 cubic yards of bottom gravel was piped off, 222,355 10-hour miners' inches being used for the purpose. This gravel yielded 13·16 cents per cubic yards, or 34¾ cents per inch of water used. The bank of bottom gravel, which also included a liberal share of the top stratum, ranged from 120 to 300 ft. in depth. Only one of the claims of this company is at present working in the channel, the deepest ground not yet having been reached. The work is, however, being conducted in such a manner as to join the three openings made there into the deposit so as to make a continuous face from 1000 to 1500 ft. in length across the channel. During the present year the clean-up of 84 days or 839 hours works, with 1300 in. of 10-hour water, amounted to $37,000. This was equal to 34½ cents per inch of water used. And the total amount of gold released from the ground removed and caught in the sluices is not represented in these figures, as the clean-up at the time the returns were made was not complete. The company has its own ditch, 32 miles in length with a capacity of 3000 in, and a distributing reservoir with a capacity of 4000 miner' inches, built at a cost of $180,000. The company is also projecting a work to include dams and a short ditch which will cost another $50,000. When the hydraulic openings reach the bottom of the channel the returns will be much greater. The Blue Tent Mines are owned by English capitalists, J. I. Courtenay, of London, being president.

The last report of the North Bloomfield Mining Company shows that 7,071,630 cubic yards of gravel has been removed from Jan. 1, 1875, to Oct. 13, 1877; this was accomplished with 1,681,972 24 hours miners' inches of water. The average yield was 38 2-10ths cents per inch of water, or 7 9-10ths cents per cubic yard of gravel. In the old washings of surface gravel near Malakoff, 3,250,000 cubic yards was removed in 1870-74 by the employment of 710,987 miners' inches of water. This yielded 13 6-10ths cents per inch of water, or 2 9-10ths cents per cubic yard of gravel. During the season of 1876 77, the company cleaned up $290,775 47 at a cost of $142,060·08, netting a profit of $148,715·34. The quantity of water used was 595,000 miners' 24 hours inches. The yield per 24 hours miners' inch was 48 9-10ths cents. The company has stripped about 1000 ft. of the channel, which is about 500 ft. in width. There is not much ground between the workings and the southern boundary of the claim. The top dirt on the greater portion of the upper part of the claim has been stripped, and the yield hereafter will continue to be large. The North Bloomfield is owned by San Francisco capitalists.

SAVING THE GOLD—RIFFLES AND UNDERCURRENTS.—The gold in the deep gravel deposit of The Ridge is chiefly very fine; in some places the channel carries coarse gold. Great care has to be taken to prevent its escape with the outpouring flood and debris. The tunnels and cuts made in the bedrock, which is rapidly worn away by the attrition of the waters and the rolling gravel, are paved with boulders. The sluices and undercurrents are paved with wooden blocks 1 ft. thick, and about 18 to 20 in. in diameter. Every few weeks these blocks have to be renewed. The immense fall from the outlet of the tunnels to the bottom of the valleys is utilised by what is known as the undercurrents—a system of zigzag sluices placed underneath one another at distances of 40 or 50 ft apart. In the undercurrent the greater portion of the water falls over the end of the sluice at the outlet of the tunnel, and carries with it all the large boulders and coarse gravel. A strong iron grating fixed on the lip of the sluice allows all the fine material with the gold and some water to fall through. This descends on a broad table placed immediately underneath, and which is riffled with blocks; over this table the light material and gold are carried, most of the latter of its own gravity dropping into the joints of the blocks, where it amalgamates with the quicksilver with which the undercurrent is charged. The water, fine gravel, and what gold remains unseparated then join the main stream at the foot of the falls, where they pass into another sluice and undergo the same operation. Half a dozen of these undercurrents suffice to catch all the gold, the lower one barely paying the cost of maintaining it. One man is constantly employed watching the undercurrent; should a jam occur, as not infrequently does, he has to work might and main to get the current clear, otherwise the stream and its precious burden might take some wayward course. These undercurrents are not only exceedingly useful, but they are correspondingly economical. Without them miles of sluices would have to constructed and maintained at great expense, and the separation of the gold would even then be scarcely as thorough as is the case with the undercurrents.

THE DEFLECTOR.—One of the most useful inventions in connection with hydraulic mining is that of the deflector—a false nozzle working on an elbow joint over the true nozzle of the monitor. The deflector is the invention of H. C. Perkins, superintendent of the North Bloomfield Mine. With its assistance the "piper" can direct the immense stream of water rushing through the nozzle wherever he wants it with his little finger. A monitor with a 7 inch nozzle, discharging 1800 miners' inches of water, in operation at the North Bloomfield Mine, might be turned up or down, right or left, by an infant. The deflector is worked by a long lever. This is drawn whichever way the "piper" wants to direct the stream, and the monitor slowly moves its huge form in that direction. It dispenses with a vast amount of manual labour, and enables the miner to use the water to better advantage. Formerly it required three or four men to move a pipe, and the operation was accompanied with considerable danger. The deflector is used in all the hydraulic mines on The Ridge.

FUTURE VALUE OF THE MINING DITCHES.—The immense reservoirs and ditches which the various mining companies have constructed for the storage and conveyance of water for mining purposes have a value beyond that of the present. These canals now carry the liquid wealth of the snow-capped Sierra to the very confines of the thirsty plains of the Sacramento, and when the end of hydraulic mining shall be in its decay they will be extended to the very heart of these plains, and their contents devoted to the irrigation of the soil. The most expensive part of the route from the Sierra to the plains has already been covered by these ditches. —From the *San Francisco Evening Bulletin*, June 25.

THE WEEK.

SATURDAY, JULY 3.—The arrangements made to-day for the Settlement disclosed the fact that a large proportion of the recent purchases of Turkish Bonds have been by weak speculators, who are unable to take them up and pay for them. Contangoes of not less than 6 per cent. were charged all round, and were considered "stiff." For all this several of the issues closed at an advance. The fact of the Congress at Berlin being now ended doubtless induced fresh purchasing. North British stock advanced 1¾ (to 93¼).

MONDAY.—The directors of the Richmond Mining Company have decided to pay a dividend of 20s. per share on and after the 20th inst. Each 5*l.* share will then have received back 5*l.* 11s. 6d. in dividends. In the course of seven months of the present year 1*l.* 15s. per share has been paid, being at the rate of something like 60 per cent. per annum, and quite unparalleled here. Javali, 7s. to 9s.; these shares remain tight. Advices received mention a monthly profit of 560*l.* having been made. A large business continues to be done in the shares of the Ottoman Bank, Bank of Roumania, and Anglo-Egyptian, all of which are now 100 per cent. above what they were a few months back; the first named has now reached par (10*l.*)

TUESDAY.—Railways were very strong all day. Chatham Ordinary touched 30¼., no such price having before been realised for several years past. Since 1875 the highest point reached has been 28*l.* 10s. High as Brighton A's stand already they were pushed further to-day to 146¼. Turkish Fives closed at 16¾. Imperial Ottoman Bank shares now stand at 10s. premium, the why or wherefore it is rather difficult to understand. Mining shares were moderately active. New Quebrada, 1¾ to 2; Kapanga, ¾ to 1; Javali, 7s. to 9s.; Gold Run, ¼ to ⅝; Malabar, ⅛ to ¼; West Tankerville, ⅛ to ¼; Roman Gravels, 7⅛ to 7¼; Tankerville, 3 to 3⅛; Wye Valley, 1¼ to 1⅜.

WEDNESDAY.—Speculators are arguing that our assuming a sort of protectorate over Turkey in Asia must result in some benefit accruing to the two railways that connect Smyrna with Aidin and Cassaba, and shares of both companies have already risen, and would undoubtedly go much higher once sufficient grounds appeared for the surmise. The shares of the railway from Smyrna to Aidin are of 20*l.* each, and have recently advanced from 3*l.* 10s. to 5*l.* The Porte undertook to guarantee for 42 year from 1866 a net annual income of 112,000*l.*, and it is because payments are in arrear that the shares are at their present low price. The shares of the other railway, from being 9*l.*, are now quoted 10 to 12. There are grounds also for anticipating an advance in the following gas companies—Ottoman, Oriental, and Para. Hudson Bay shares touched 12 to-day; as we pointed out at the time, they could be had at 10 quite recently. The Royal Aquarium report announces a dividend of 5 per cent. on the ordinary shares, and that all the preference shares have been taken up.

THURSDAY.—Some enterprising individual in the City, now that brokers are beginning to have their hands full of business, proposes to found a "Stockbrokers Mutual Protection Society" giving "names of defaulters, with sufficient data and identification. The register will" (so the prospectus states) "contain an alphabetical and classified list of the christian and surnames of defaulters, with their addresses, liabilities, and other particulars." Some similar arrangement has existed for years past on the mining market, where a few names (and it is due to the public to state that the number is very small indeed) are as familiar as household words, not only as defaulters but as indulging in the reprehensible practice of writing ten or twelve similar letters on the same day to various brokers. Not long ago a person was very properly exposed for telegraphing four different messages—"Am remitting usual cover; buy for me 10,000 Unified."

FRIDAY (*Opening*).—The markets are irregular. One or two railways show a rise, while foreign bonds are lower. Turkish may be considered flat. The 1873 Loan is down to 20, and the Fives to 16¾. Caledonian stock is as high as 113¼. Hudson Bay shares are firm at 12¼. The price was 11 last Friday. Flagstaffs may be had at 10s., and Colorado at 5⅛. Richmond, 12¾ to 13⅝; Kapanga, ¾ to 1; Quebrada, 1⅞ to 2¼; East Van, 3¾ to 4; Van, 20 to 21; Great Laxey, 17⅛ to 18; United Mexican, 3¼ to 3⅜.——*Two o'clock.*—The irregular tendency has continued. Dover, A, is down, Midland is up, Russian are firm, Turks weak, Turkish, 1873, is now only 19¾, the Fives being 16¼ to 16⅝. Caledonian stock has receded to 113. Hudson Bay shares have been offered rather largely, and have fallen to 12¾, 12⅝. Roman Gravels, 7⅜ to 7⅝; West Tankerville, 1s. to 3s.; Great Laxey, 17⅛ to 18⅜; Tankerville, 3 to 3⅛.——*Four o'clock.*—A sudden improvement in Unified to 55½, 5*s.*, led to a rally in the other markets, Great Western, Midland, and Caledonian being remarkably firm. Turks, however, show a fall on the day. Leadhills, 3¼ to 3½; Rookhope, 16s. to 18s.; Javali, 7s to 9s, Port Phillip, 11s. to 13s.; Chicago, 10s. to 15s.; Chapel House Colliery, 2¾ to 3 Bi son and Crump, 2⅝ to 2⅞; Newport Abercarn, 3 to 3¼; Cardiff, 10s. to 15s.

FERDINAND R. KIRK.

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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JULY 19, 1878.

IRON.	£ s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde..	2 9 10½	- —
,, Scotch, all No. 1 ...	2 10 0	3 10 0
Bars, Welsh, f.o.b. Wales	5 0 0	5 5 0
,, ,, in London.	5 12 6	5 15 0
,, Stafford., ,, .	6 15 0	7 10 0
,, in Tyne or Tees ...	5 5 0	5 10 0
,, Swedish, London ..	9 10 0	(nom.)
Rails, Welsh, at works..	4 15 0	5 0 0
Sheets, Staff., in London	8 5 0	—
Plates, ship., in London	6 15 0	—
Hoops, Staff.	7 15 0	—
Nail rods, Staff. in Lon.	6 10 0	6 15 0
STEEL.		
English, spring 13	10 0	19 0 0
,, cast 30	0 0	40 0 0
Swedish, keg.....14	0 0	—
,, fag. ham. 15	0 0	—
LEAD.		
English, pig, common.. 16	17 6	—
,, ,, L.B..... 17	2 6	—
,, ,, W.B. 17	10 0	—
,, sheet and bar..18	0 0	—
,, pipe.....18	10 0	—
,, red 19	0 0	—
,, white 24	5 0	26 0 0
,, patent shot ...21	0 0	—
Spanish 16	12 6	16 15 0
NICKEL.		
Metal, per cwt 18	0 0	20 0 0
Ore, 10 per cent. per ton.24	0 0	26 0 0
QUICKSILVER.		
Flasks of 75 lbs., ware. 7	0 0	—
SPELTER.		
Silesian 18	2 6	18 5 0
English, Swansea 18	15 0	—
Sheet zinc 21	10 0	22 10 0

TIN.	£ s. d.	£ s.
English, ingot, f.o.b...	65 0 0	—
,, bars ,, ...	66 0 0	—
,, refined.....	68 0 0	—
Australian	61 10 0	—
Banca	63 0 0	(nom.)
Straits	61 10 0	61 15 0
COPPER.		
Tough cake and ingot.	67 10 0	68 10 0
Best selected	68 10 0	69 10 0
Sheets and sheathing.	73 0 0	—
Flat Bottoms	78 0 0	—
Wallaroo	73 10 0	73 15 0
Burra, or P.C.O.	71 0 0	—
Other brands	68 0 0	69 0 0
Chili bars, g.o.b.....	63 5 0	—
PHOSPHOR BRONZE.		
Bearing metal	£112 0 0	
Other alloys	£120 0 0	140 0 0
BRASS.		
Wire	7½d.	8d.
Tubes.....	7½	— —
Sheets	8¼	- 8¾
Yel. met. sheath. & sheets.	6	- 7
Nails composition.....	8¼	- 9

TIN-PLATES.*	per box.
Charcoal, 1st quality ...	1 1 0 - 1 2 0
,, 2nd quality ...	0 19 0 - 1 0 0
Coke, 1st quality	0 17 0 —
,, 2nd quality	0 15 0 - 0 16 6
Black .....per ton	16 0 0 - 16 10 0
Canada, Staff. or Gla., at Liverpool	11 10 0 - 12 0 0
Black Taggers, 450 of 14 × 10	30 0 0 - —

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—This has been a quiet week for metals, and there is very little to add to what we have said in recent reports. Our views are not in the least shaken, but if anything are stronger than before, against a rise in prices just yet, at the same time to prevent mistakes being made we will again point out in the plainest way we can the exact state of our markets, so that every one may be able to judge for himself what is the best course to pursue. A very few words will suffice to explain how matters stand, indeed we might express in one word the substance of the whole, and that is to be found in surplus. It is the surplus stocks which have weighed down our markets, and as the supplies still show no falling off, and the demand is light, there does not exist much, if any, chance of stocks getting smaller; and one thing is very certain, that unless the demand improves or supplies decrease no advance in prices can take place. The last returns prove stocks to be on the increase and exports on the decrease, and when the totals are again made up at the end of the month we believe they will be found worse than the last; and in the event of this being the case, we all know very well what effect is likely to be made on the market. If sellers are able to obtain higher rates, or even to maintain present rates, then it will be more than they have ever been able to do under alike state of affairs, but were things only to stand still, holders perhaps would not so much object, as they believe that relief will come in time, and they are always hoping that it is near at hand, but how false is this hope, and what risks it involves. No, they may be sure that lower prices will follow, for the market cannot hold up against surplus stocks and supplies and a light demand Then why not take at once the best prices that can be had, and sell without delay?

Time after time have we urged holders not to stand in their own light, but to save themselves from further risks and losses by closing up their bad bargains; but as drowning men catch at a straw, so have holders clung to their stocks, trusting to chance as to what might turn up, and there are many still trusting to chance, and what a prospect! Trusting to chance! One would think such mad ideas could not exist in the minds of the wildest schemers of the present age, leave alone traders; but we will dismiss their wild fancies with the bare mention of them, and take a glance at one of the strongest forts upon which they rely. It is said that there is nothing unusual in trade being dull at this season of the year, and that it will now soon right itself. In regard to the first statement, it is true to some extent, but not wholly so, because trade is duller than usual; and, secondly, there is extra pressure bearing upon it that prevents a speedy return. There are many things that will serve to keep back the demand, but the chief cause of the decline in prices is the over supply. Now, the excess has not come upon us all at once, for it has been growing by degrees larger and larger; neither has the demand taken any sudden turn, but slowly become smaller and smaller; therefore, the real state of our markets could be both seen and known, and yet, in face of large and growing stocks, and lower prices, supplies are kept up, and rather increase than otherwise. Now, what can be the meaning of this, unless it is that low as prices are yet there are people who are eager and willing to accept them, and that in some places, at any rate, it still pays to produce metals for sale at current rates, and we are not to be looking for any falling off in imports on that account. The gist of our remarks, therefore, amounts to this, that present prices give no check to the supply, and no impulse to the demand, and that lower prices are needed to reduce the former and restore the latter, for while things remain as they are the markets cannot improve, and the sooner they are put right the better for all parties, as no good is to be gained by delay. Besides, there is some mention of dear money shortly, and that would not help to mend trade, but might prevent its moving at so soon a date and at the same rate as it most likely would if no change took place in the money market; but there will be no life or strength in metals until lower prices prevail.

COPPER.—The unfavourable character of our market has become more glaringly manifest this week than at almost any previous period, and monopolisers of Chili produce are at last sensible of the dangerous position they occupy. Some holders early discerning their untenable position, and doubting exceedingly whether the fictitious prices could be long maintained, quickly turned round and realised a portion of their copper at a trifling difference of 10s. to 20s. per ton on the purchase price, but the more reluctant and less acute preferred waiting, and consequently suffered double and treble the loss. Chili bars that were bought at 68*l.* on speculation have been sold at 62*l.* 10s. less commission, or at a loss of 50s. to 60s per ton. How much better would these operators have done if they had followed our advice in the first instance; but there still remain the obstinate incurables, who will doubtless ultimately have to sell at a tremendous sacrifice simply because they lacked the courage to accept the first loss. The downward tendency appears to have only just commenced, and buyers are fully anticipating the speedy collapse of the whole market, and really it is not surprising that such views should be formed when the actual state of affairs is calmly considered, for a more deplorable account of the market we believe it has never been our misfortune to have to record, and whatever will be the upshot we dare not venture to predict; but this we know that a combination of events of the most damaging nature has just transpired that cannot fail to produce a profound feeling of depression upon the market, and that the interest of holders must necessarily be greatly jeopardised, and that a considerable time will undoubtedly be required to restore the equilibrium, and to impart renewed vitality. Our past reports have in great measure paved the way for a decline, and, therefore, the present revelations which we are about to make will probably not take our followers by surprise. The beginning of the week or on Monday last, which, by the-bye, was anything but Saint Monday for the copper market, the charters from Chili were telegraphed as 2300 tons pure copper, consisting of 800 tons bars and ingots, 1300 tons ores and regulus for England, and 200 tons of bars and ingots for the Continent. On the same day was issued the bi-monthly statement of imports, stocks, and deliveries, which are clearly set forth in the following condensed form:

Stocks in Liverpool and Swansea	Tons 21,740
Afl. at and chartered	10,700
Imports	2,876
Increase during past fortnight	2,074
Deliveries	802

The above information is of the highest value, inasmuch as it exhibits the enormous and ever increasing stocks, also the increasing quantity afloat, and the extremely small delivery in comparison with imports. Thus it will be seen how considerably the demand has fallen off, and how much the supply is augmented, and what overwhelming evidence exists on the side of reduced prices. Prices naturally have given way but only slightly as yet to what may be expected under such adverse circumstances. Not only is the consumptive demand diminished, but shipments to the East are likewise contracted, and since the Exchange has ruled so low there have been few, if any, fresh inducts given out, and manufacturers must be sadly in want of orders; but the raw material is held for disproportionate rates to what can be obtained for sheets, and this is one of the obstacles at the moment to increased business, which, however, will be swept away after a temporary duration, for there will sure to be some realisations taking place. All sales over and above 60*l.* per ton for Chili bars should be made without hesitation, but it is a question for buyers to decide as to whether bars are now really worth so much. This price might have been paid with some degree of confidence a short time ago, but this week's exposure may make a material difference in buyers' limits, and it does not require a very far sighted person to see that if holders do not meet the market stocks will continue to accumulate, and the position of holders will become most critical.

IRON.—The unchangeable state of our market renders it somewhat difficult to adjust a report in any different terms to those we have already published, and it will afford us the greatest amount of relief whenever we are able to state that the market is undergoing a visible change for the better, or that there is the bare prospect ahead; but such a happy change is not our good pleasure to chronicle on the present occasion, and we must be content to give a *resumé* without the satisfaction of reporting a favourable amendment, for the demand does not increase, and shows no prospect of doing so at present. The market is perfectly lifeless, and nothing has proved sufficient to stimulate buyers to come forward to buy, but in such few instances were transactions have taken place sellers have had to make concessions to meet buyers' limits. Staffordshire hoops of best quality have been sold at 7*l.* 1 s., and common hoops are reported at 6*l.* 17s. 6d, but this we will not vouch for; common bars can be bought at 6*l.* 10s., but buyers will not exceed orders even at these figures, and it is perfectly evident that a general reduction will have to be made to ensure any particular amount of business Cookley's sheets have been reduced 1*l.* per ton. The maintenance of the prices of pig-iron is owing entirely to speculative dealing, and has no reference whatever to ordinary business, which is decidedly flat and declining, and this can be plainly seen by any one who will take the trouble to compare the exports for several weeks past; but speculators will probably get sick of these operations presently, and throw up their iron for the benefit of legitimate traders. Stocks are accumulating, and the longer speculators retain their holdings the greater their loss will be, so if they are wise they will cut it at once.

The trade, far from showing any signs of improvement, is reported from many districts as being much quieter. This would appear to be almost impossible, and it seems hard to believe that business could become more limited than than it has been for the past few months; yet if the various returns are to be taken into account, there can be little or no doubt as to the markets being as languid as they ever have been represented before, and it only shows the utter foolishness, as we have from time to time stated, on the part of sellers not making a general and sensible reduction in their quotations, which, if they had done some few months ago, might have secured many orders which, though their want of foresight, they have thrown away to be executed in other countries. They naturally seek for something by which they may excuse their folly, and so they try to place the blame on the employed, but we feel sure that had proper management been used this obstacle might to a very great extent been remedied; as it is, however, the trade has been left to run its own course, and like everything else when neglected continues to decay We will, however, once again give extracts of the several returns from the various producing districts, that it may be seen that these are not merely the views of a few members of the trade, but rather the unanimous opinion throughout the whole kingdom. Let us begin with the markets at Leeds, from where it is stated that little or nothing is doing. It is also reported that on account of the annual fair, many masters intend closing their works for three weeks, and giving their men a holiday, which they are little in need of. The demand for sheets is stated to be very weak, and although that for bars and angles is not quite so feeble, yet the demand altogether remains in a most unsatisfactory condition. Two or three mills are said to be giving moderate employment to some few men, but with this exception nothing can be reported in favour of the trade. Evidently there is not sufficient interest taken in the welfare of the trade, which is a very bad sign, for there could be no doubt that business would become more healthy if those who have the influence and power would do their utmost to achieve the restoration of the trade to its former activity.

At the Rotherham district, however, business, though still dull, is said to have shown some slight improvement during the past week upon its immediate predecessor. Prices, however, have not changed, but it is said that merchants have shown more disposition to place their orders than has been the case of late. The enquiries for general merchant iron are said to have exceeded those for heavy iron, but at South Durham and the Cleveland district business is reported as being very dull, especially that for pig-iron, for which metal it is stated that the Quarterly Meeting, rather than increasing business, as was expected by many masters, has lessened it. Makers, however, still refuse to accept contracts below the ruling prices of 42s. 6d. to 43s. for No. 1, 39s. for No. 3, and No. 4 forge 38s.; and it is stated that they are not likely to give way in their quotations, as most of them have pretty well sold their iron over the present period through the rather improved state of the market a little while back. But it is not only in pig-iron that transactions are so scanty, manufactured and finished iron being also in the same dull state. It is reported that there are very few new orders on manufacturers' books, the mills merely being kept going by some few old contracts. Prices, however, keep without alteration, last week's quotations of 6*l.* 2s. 6d. to 6*l.* 5s. for ship plates, and 5*l.* 12s. 6d. for angles, still continue to rule the markets; and although 5*l.* 10s. per ton for bars, according to the last Middlesborough return, is quoted, still this low, and what ought to be tempting, figure is not sufficient to induce buyers to place their orders. They, unless wanting the iron for immediate delivery, prefer abiding their time, and seeing whether prices will not even go lower than they are at the present time. Puddled bars and other descriptions of iron having shown no alteration, either as regards the price or demand, need no further comment.

At Barrow-in-Furness, though sales in hematite brands of pig-iron have shown some slight improvement compared with that ruling at the early part of the year, still it is stated that the mills are certainly not turning out more than two-thirds of what they are capable of doing. Enquiries are said also to have become slightly more numerous, though merchants still refuse to buy on speculation; this it is represented as causing many makers to believe that the trade must ere long revive very considerably, and hopes are stated as being entertained that many of the forges which have now been out of blast for so long a time may be relighted, and that the mills which have been closed may open again, after having been shut up on account of the distressing state of the trade. Quotations, however, for all descriptions keep without any material alteration, masters seeing that it would be no good for them to advance their prices, and refusing to reduce them, as they consider that the present rates are much lower than they ought to be. A fair demand exists for iron ore, but that for all other descriptions keeps very quiet. The foreign trade, like the English, is also stated as being dull, and the last mail from New York shows that the total number of tons of bars imported into that country from Jan. 1 to June 30 was 4027—3824 tons of pigs and 6499 tons of sheets, as compared with 2061 tons of bars, 8090 tons of pigs, and 14,466 tons of sheets in the corresponding periods of 1877. The demand for Scotch is limited, and sales are only made of small parcels to meet the most urgent wants of the trade. Glengarnock is quoted at $23; Eglinton, $22 50; and Coltness, $22. In the absence of business for scrap, $20 to $21 is quoted for No. 1 wrought from yard, and $13 to $16 for cast. A fair demand exists for rails at $32 to $36, and old $17 to $18. No change is reported in manufactured. The warrant market at Glasgow continued dull last week, and business done from 49s. 6d. to 49s. 7½d. for prompt cash. This week a limited amount of business has been done at 49s. 6d., with our markets now closing at rather higher prices—49s. 10½d. cash.

SHIPMENTS.

For the week ending July 14 1877	Tons	7,472
For the week ending July 13, 1878		7,151
Decrease		321
Total decrease for 1878		39,788
Imports of Middlesborough pig-iron into Grangemouth:—		
For the week ending July 13, 1878	Tons	4,800
For the week ending July 14, 1877		3,607
Increase		1,193
Total increase for 1878		4,569

FURNACES.

In blast July 7, 1877.....	109
In blast July 6, 1878.....	96

TIN.—Prices of English and foreign have remained remarkably steady, although it is said that the deliveries for the first fortnight of this month have been small. The report from the New York market states that no transactions of any importance have taken place. Straits is quoted 14½ c., but the demand is very light, and the holiday has interrupted business to some extent. There is no Australian in the market, and the quotation is, therefore, nominal. In referring to the Board of Trade Returns last week, we stated that the imports of this year were in excess of those for 1877. This is quite correct, but in regard to the exports we stated they were less, and this is also correct so far as the shipments of English are concerned, as they are below those of 1877, but when the foreign are included they are larger, the aggregate totals for 1878 being 6437, against 4609 in 1877.

TIN-PLATES.—The demand is moderately good, but prices of coke are no better. The old-fashioned plan of working up plates by hand seems destined to be superseded by the invention of American machinery. Its introduction into this country will completely revolutionise the trade, and will no doubt in a short time greatly increase the demand for tin-plates, as the work can not only be turned out quicker, but better and cleaner and cheaper.

LEAD.—This metal is quiet, and rather easier in price.

SPELTER.—In fair request at about current quotations.

QUICKSILVER.—Unchanged. Market price still 7*l.*

THE IRON TRADE.—(Griffiths's Weekly Report).—Friday evening. The market for Scotch pig iron has been steady this week, and a moderate business has been done on the Glasgow Exchange in g.m.b. iron. Warrants close this evening on the Glasgow Exchange with sellers at 49s. 10½d., buyers about 1d. less; this is an advance this week of 3d. per ton. Makers' iron is in several cases 6d. lower. We quote No. 1 iron:—Gartsherrie, 57s. 6d.; Coltness, 61s.; Calder, 58s.; Langloan, 58s 6d.; Monkland, 50s. 6d., f.o.b. Glasgow; Glengarnock, 56s.; Eglinton, 50s. 6d., f.o.b. Ardrossan; Shotts, 59s., f.o.b Leith. There has been more business in our market this week than for some time past; the indents are quietly being placed on the market, and enquiries for various kinds of iron for Russia are numerous. Already consignments of iron are in course of manufacture for one or two ports on the Danube, and it is confidently expected that Cyprus in its requirements will immediately add to the legitimate demand for Staffordshire iron. A railway, docks, and two harbours will immediately be constructed on this latest acquisition to her Majesty's dominions. The demand for galvanizing sheet iron keeps up very well, and the prospects of the trade certainly look a little brighter. The Yorkshire houses have had more orders, and there has been some good buying this week of B.B.H. bars, and the Earl of Dudley's Round Oak brand, in Staffordshire.

The market at Barrow on Monday was quiet. The same may be said at Middlesborough on Tuesday, but the posture of the exchanges at both these centres clearly indicates a pause in the downward tendency of the raw material. We have little change to notice in the Scotch market. Shropshire pigs are firmer; the Lilleshall Company having sold one or two large lots since Quarter-day, are now less disposed to part with their stock. North Staffordshire pigs are also firmer, and the strength of the general market for the raw material is indicated by the significant fact that all the smelters are unanimous in their determination not to sell forward beyond the end of this year. This remark applies to all our smelters, except Middlesbrough, and of these we are not in a position to speak positively. We have no change to notice in the tin-plate trade. Cokes are flat, and being made and sold at a considerable loss. Charcoals are in better demand, and this department of the trade is more healthy. Spelter weak and inanimate. Tin drooping. Copper weaker.

Messrs. FRY, JAMES, and Co.—COPPER: The market has been very quiet, and prices of Chili have gradually drooped, showing a reduction of about 30s. per ton during the past fortnight. Australian descriptions are comparatively firm, but the amount of business passing is small. About 500 tons of copper ore sold yesterday at 12s. 1½d per unit.—TIN is rather lower, the closing price for Straits being 61*l.* 10s. to 61*l.* 15s., and for Australian 61*l.* 5s. to 61*l.* 10s., or about 10s. per ton fall since our last.—IRON is without change.—SPELTER is steady but quiet.—TIN PLATES are without any improvement.

Messrs. HARRINGTON, HORAN, and Co. Liverpool).—Arrivals here during the fortnight of West Coast, S.A., produce:—John Elder, from Valparaiso, 918 tons bars, 127 tons ingots; Glamorgan, from Chanaral, 800 tons bars; Vallejo, from Valparaiso, 385 tons bars. At Swansea, Marquis of Worcester, from Tocopalillo, 178 tons ores, 345 tons regulus, 185 tons bars; Glanrafon, from Carrizal, 735 tons regulus Stocks of copper (Chilian and Bolivian) in first and second hands likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool.....	—	917	15 580	—	—
Swansea	1625	7646	1,991	—	—
Total.....	1625	8563	17,571	—	—

Representing about 21,749 tons fine copper, against 19,675 tons June 30; 15,692 tons July 15, 1877; 13,007 tons July 15, 1876; 14,523 tons July 15, 1875. Stock of Chili copper in Havre, 8168 tons fine, against 8450 tons June 15, 1877; stock of Chili copper afloat and chartered for to date, 10,700 tons fine, against 10,600 tons July 15, 1877; stock of foreign copper in London chiefly Australian, 6045 tons fine, against 4300 tons July 15, 1877. In our last issue the London stock should have been 6300 tons fine.

The MINING SHARE MARKET continues very inactive, and indeed there is scarcely any kind of business doing. We are told, however, that now peace has been secured trade will improve, orders for metal will flow in, and after the holidays are over a large amount of business will be doing in legitimate mines. We trust it may be so, for many of them are very low just now, and any sudden demand may cause a good rise.

TIN shows no improvement in price. The Banca sale comes off on the 31st, and this may show us whether we may look for a rise or not. In the meantime tin mines are neglected, and prices generally lower. Wheal Owles meeting took place last week, when one of the results of stocking tin, instead of selling it to meet current costs, was fully exemplified. The debt on the mine is 22,345*l.*, and a call of 62*l.* 10s. per share was made. There are only 80 shares in the mine, so that even this call only represents 5000*l.* South Frances, 2½ to 3; this mine is looking well, and scarcely gets the attention its reports would seem to justify. Last quarter the mine made a profit, and its returns have since increased. Wheal Peevor, 6 to 6½; the various points in operation here are valued in the aggregate at 233*l.* per fathom.

South Condurrow have been freely offered at 11¼ to 11¾. Cook's Kitchen, ¾ to 1; at the meeting next week a call of about 10s. may be expected. Carn Brea, 38 to 40; Dolcoath, 27 to 29; Penstruthal, 5s. to 7s.; South Crofty, 6 to 7; Tincroft, 8 to 9; West Basset, 12s. 6d. to 17s. 6d. West Frances, 2½ to 3; it is expected that a small call may be made at the meeting. Wheal Agar, 4 to 4½; Wheal Grenville, 2½ to 3; Wheal Kitty (St. Agnes), 1½ to 2; Wheal Peevor, 6 to 6½; Wheal Uny, ¾ to 1; West Godolphin, ¾ to 1.

COPPER Mines are quiet. At the Cornish Ticketing on Thursday the standard for ore advanced 7s. per ton. The average price obtained was 5*l.* 9s. per ton. Devon Great Consols, 2½ to 3; 665 tons sold realised 1309*l.* 17s., or under 2*l.* per ton all round. South Caradon, 60 to 70; the average here was high, 480 tons having realised 2626*l.* 18s. Marke Valley, 15s. to 17s. 6d.; 300 tons here brought 997*l.* At Hingston Down 115 tons realised 1*l.* 16s. per ton, or 203*l.* 8s. West Tolgus shares, owing to adverse rumours, have been more freely offered at a decline to 52½ to 55. Parys Mountain, 7s. 6d. to 8s. 6d.; a great change seems to be taking place in the 90 cross-cut south, where several branches of copper have lately been cut, and which would seem to indicate the near approach of the lode. Morfa Du, 12s. 6d. to 15s.; we hear that a good many applications have been made for the bluestone of this mine, and it is hoped the company will be raising good quantities of it as soon as the main deposit is reached.

LEAD MINES, though favourites, are flat, like most others, and prices are merely nominal. Roman Gravels, 7¼ to 7¾; the 110 north of new shaft is worth 1 ton of lead per fathom; the 110 south is also worth 1 ton per fathom; the sampling for the month is 180 tons of lead ore, for sale next week. Tankerville, 3¼ to 3½; the 206 cross-cut south is driven to a point where rich lead ore is seen, worth quite 1½ ton per fathom; but the agent thinks that the wall of the main lode has not yet been reached. Temple, 5½ to 5¾; Denbighshire, 1 to 1½; D'Eresby Mountain, 80 to 90; D'Eresby Consols, 10 to 11; Clementina, 1½ to 1¾; Aberllyn, 10 to 11; East Van, 3¾ to 4¼; Glenroy, 12s. 6d. to 15s.; Grogwinion, 3 to 3½; Great Laxey, 18 to 19; Leadhills, 3¼ to 3½; Llanrwst, 2 to 2½; Pandora, 12s. 6d. to 15s.; Rookhope, 17s. to 19s.; Tyn-y-fron, 1¼ to 1¾; Van, 20½ to 21½; West Chiverton, 8½ to 9½; Wye Valley, 1½ to 2; West Wye Valley, 2½ to 3.

West Tankerville accounts show a loss on 12 months' working to April 25 of 1564*l.* 17s. 8d. The lead sold, 355 tons, realised 4238*l.* 2s. 6d.; blende, 120 tons, 424*l.* 10s. The difference in the price of lead would seem very nearly to account for the loss. In the year previously the price obtained for the lead was 14*l.* 17s. 6d., the average of the 350 tons was 11*l.* 18s. 9d., or less by 2*l.* 18s. 9d. per ton. The working costs for 12 months were 5385*l.* A supplemental statement of accounts to the present time shows that the liabilities of the company exceed the assets by 310*l.* 19s. 5d. The expenditure upon the mine, including 28,000*l.* paid for the lease, has been 45,000*l.*; the returns 21,473*l.* 8s. 9d. West Pateley, 2 to 2½; the 26 is gradually improving in size and value, and is said to be favourable for a good course of ore. Good progress is being made in Craven Cross shaft, where good rocks of lead have been met with. Pateley Bridge shares have advanced to 25s., 35s. The late discovery has improved to 5 tons of lead ore per cubic fathom. The mine is only in 4000 shares.

FOREIGN MINES.—Cape Copper, 31 to 32; Colorado, 5¼ to 5½; Chontales, 7s. 6d. to 10s.; Don Pedro, 10s. to 15s.; Eberhardt and Aurora, 6¾ to 7; Flagstaff, 7s. 6d. to 12s. 6d.; Frontino and Bolivia, 1¾ to 2; Javali, 7s. to 9s.; New Zealand Kapanga, 15s. to 20s.; Last Chance, 1 to 1¼; New Quebrada, 1¼ to 2½; Pestarena, 4s. to 6s.; Port Phillip, 10s. to 12s. 6d.; Richmond, 12½ to 12¾; St. John del Rey, 285 to 295.

The Market for Mine Shares on the Stock Exchange has remained without any material change since last week. There may be slightly more business doing, but the amount is still very limited. A piece of information which is calculated to shake the confidence of English capitalists in every description of American property offered on the guarantee of a Government title has just come from California, for it naturally suggests itself that although fraud cannot be altogether prevented, the failure to detect it even when carried on upon the grandest scale, and with great publicity, shows the entire system is rotten. If a State seal can be counterfeited, and the millions of acres conveyed by the fraudulent document held long enough to build and improve homesteads and residences before the Government points out the deception, English capitalists cannot be too strongly cautioned against all property whatever offered on the security of an American title, whether it be a United States patent, a State land warrant, or any other kind of United States grant. The gigantic swindle recorded in a recent number of the San Francisco Chronicle is more disgraceful to the Government and the laws which permit it than to the perpetrators of the fraud. It is remarked that "a fraud of a startling nature, and doubtless one of the most stupendous in its purposes and results ever perpetrated in this State has recently been discovered, amounting to nothing less than the counterfeiting of the great seal of the State of California, and its application to prodigious schemes of thievery. For what period and to what extent this fraudulent instrument has been in use outside investigation has not determined, but it is quite certain that many thousands—may be millions—of acres of land, including some of the best improved and valuable in the State, are held under fictitious titles, devolving upon the employment of this counterfeit. It is further intimated that men of prominence and hitherto esteemed integrity are concerned in this fraud, and that its perpetration will in due time solve the mystery of many an easily accumulated fortune in various quarters. From the extent to which fictitious titles to land are held under this counterfeit seal in all parts of the State it is evident that hundreds have been directly or indirectly concerned in the villany, while the victims may be estimated by thousands. It seems no less assured that public officials in some quarters have been implicated in the business, and shared in the guilty profits. . . . It is appalling to contemplate the amount of litigation that may attend a thorough sifting of the frauds that have attended the use of the counterfeit seal, the hardship that will befall the thousands of holders of fictitious land titles, and the infamous downfall of not a few of the high in estate. Already the finger of suspicion has been pointed in various directions, and startling events may be looked for speedily if some unwholesome influence does not impede the progress of investigation." Probably the only fraud approaching it in the danger inflicted upon innocent parties was the great forgery of Bank of England notes upon the Bank's genuine paper, stolen by an employé for the purpose, but whereas in that case the Bank of England determined to pay, and actually paid, the forged notes to maintain the reputation of its paper, it is most unlikely that any similar course would be adopted in America. English capitalists can, therefore, only be advised to touch no new American security whatever, and to be cautious with those already on the market until the matter has been fully and satisfactorily cleared up.

The Mineral Corporation of Great Britain held its statutory meet-

last on Tuesday, and the Chairman—Mr. Eugene Feillet—announced that the capital is being well taken up in France. In connection with the transfer of the Hafna property to the corporation, a somewhat novel principle which, if carried out with honour and integrity, cannot fail to prove satisfactory to capitalists has been introduced. From the notice of the extraordinary general meeting convened for the same day as the statutory meeting, and which embodied three special resolutions to be considered, it appeared that the actual price paid by the gentlemen who sold the property to the corporation was 2750l., payable 1750l. in cash and the remainder in fully-paid shares of the company. The first special resolution merely considers the ratification of this purchase, so that being passed, the shareholders are in a thoroughly independent position for the discussion of the second question, which to the vendors is by far the more important one. They have to consider "the remuneration to be paid to the vendors of the Hafna Mine in consideration of their handing the same over to the company at cost price." There are probably few vendors who would be disposed to place themselves so entirely in the hands of strangers; but that it affords to capitalists an undoubted security against overcharge is beyond question, and whatever protects the capitalist must be to the ultimate advantage of mining generally.

The Cerro de Pasco mining district of Peru has frequently been referred to for its great richness, and the carrying out of the will of the late Mr. Henry Meiggs is likely to make it still better known to the English public. A company, with a capital of 3,000,000l., in shares of 100l. each, has been formed for working the Cerro de Pasco region, constructing a drainage tunnel, establishing machinery and reduction works, completing the Oroya line of the Central Tran-Andean Railway, and building the extension from that point to to the Cerro de Pasco Mines. The engineer of the Pacific states that 840,000l. out of the 3,000,000l. has been already subscribed by 18 of the late Henry Meiggs's relations and connections, and gives an interesting biography of each of the subscribers. It is stated that there is at present no intention of placing the remaining shares on the market. All the present shareholders appear to be men of energy and influence, and the President of Peru—Mariano Ignacio Prado—figures as patron of the concern.

Colorado, 5¼ to 5⅜; the telegram received this week from the agent states that the mill has started, and is working well. There has been accumulating for some time past 10 000 tons of ore, which it is calculated will employ the mill for 12 months at least. The present monthly returns ($16,000 to $18,000) are only the results of first-class ore; therefore, a far larger return will be made when the lower class of ores are concentrated by the mill, which is now running. The annual report is issued, and shows that the whole of the expenses incurred by the lawsuit—also those which arose from the consolidation, and more particularly the reopening of the property after it had remained dormant for such a length of time—have been written off or paid for by the assets (9923l. 10s. 7d.) of the old company. The directors have resolved to issue the remaining 4000 shares of the original capital, and think it right to offer them to the shareholders at par (5l. per share) before offering them in the market. The annual meeting is to be held on August 1, and the report to be presented states that three important circumstances have tended to diminish the actual profits.—1. The failure of the First National Bank at Georgetown in June, 1877, whereby the company lost 1149l., of which only a small portion may eventually be recovered.—2. The fire which occurred in the engine room over the Terrible main shaft in October last, whereby the company was put to expense computed to be at least 1000l.—3. The large amount expended in restoring the property on the resumption of mining operations after two years of enforced suspension. Notwithstanding these adverse circumstances, and although the operations at the mines have been mainly directed to their development with a view to future profitable working, the accounts show a profit on mining operations of 1084l. 4s 5d. During the year the Terrible Mine has been opened up in a very satisfactory manner.

St John del Rey, 285 to 295; the telegram received on Tuesday states that the produce for June was 35,000 oits., of the value of 13,562l., the ley of the ore being 5·8 oits. per ton, or 7·2 oits per ton by the old measurement. The latest telegram received this afternoon, dated Rio Janeiro, July 17, states that the produce for the first division of July (eight days) was 9000 oits., of the value of 3487l., the ley of the ore being 5·5 oits. per ton, or 6·8 oits. per ton by the old measurement. Don Pedro North del Rey, ¼ to ¾; Captain Vivian reports that "at present the produce is very small, only owing to the poorness of the mineral from the upper levels, where the lodes are still large, and have a very promising appearance, therefore a change for the better may occur at any instant. If they could only work the rich courses of ore at the bottom of the mine, then a great increase would be obtained at once, but in consequence of the water having been in that part of the mine for such a length of time, thus causing the surrounding ground to become saturated with water, it is impossible that the lodes at that point can be worked on before they are drained from below." Santa Barbara, 1 to 1¼; the manager (June 12) writes that but little has been done since last advices towards the completion of the pumps, owing to so many other repairs of an urgent nature having to be attended to the men are prevented constantly working at these pumps. The quantity of ore raised during the month amounted to 1324 tons, of which 298 tons were rejected as refuse stone, and 1026 tons treated at the stamps. Average quantity of ore raised per borer for the month 28·7 tons.

Richmond, 12¼ to 12¾; the directors have declared a dividend of 1l. per share, free of income tax, payable to-day. The usual weekly telegram from the mines at Eureka, Nevada, state that the week's run was $60,000, from 1000 tons of ore. During the week the refinery produced doré bars of the value of $50,000. From the Washoe district the news continues favourable. At the California mine the re-timbering of the Consolidated shaft is being pushed ahead with all the speed possible, the heat being so intense it being almost impossible for the workmen to endure it for even a few minutes at a time. Double shifts of men are employed, and every effort used to give the men all the air possible, and still the heat is so great that they cannot endure it for more than a few minutes at a time. This necessarily makes this portion of the work very slow, and greatly impedes the extraction of ore and the advance of the prospecting works on the lower levels. At Consolidated Virginia much difficulty has been experienced in prosecuting the work on all the lower levels of the mine during the week on account of the great heat. The winze in the ore body on the 1650 level has completed a connection with the west cross-cut from winze No. 1, the entire depth continuing in ore of a good quality. Another winze in the ore body below this level has been started 70 ft. further to the southward, the bottom of which, at a depth of 17 ft., still continues in splendid ore.

Hultafall, 4 to 5; there is no change to report in the mines during the past week. A detailed report will, it is said, be issued next week. Everything goes on satisfactorily.

In Lead Mine shares there is absolutely nothing doing, although every effort is being made to do business even at a liberal discount upon current quotations. There is, unfortunately, no doubt that the supply of lead is much in advance of the demand, and this state of affairs is maintained by continuing to work mines which have no reasonable chances of earning profits even with the metal at considerably higher prices. Van, 20 to 22; there is but little change to note in the report from the mine. The various operations are reported to be progressing as usual, and the mine is looking remarkably well. The sale next week will be 400 tons lead and 150 tons blende. Tankerville, 3 to 3½; the general meeting is to be held on the mine on August 2. The accounts show a loss on the twelve months' working of 499l. 7s. 7d., but there has been an expenditure from revenue on capital account of 513l. 11s. 3d., so that the mine is rather more than paying cost, although the price of lead has averaged only 12l. 9s. 9d. per ton, against 14l. 8s 6d per ton in the preceding year. The balance of assets over liabilities is 486l. 8s. 8d. South Darren, 2 to 2¼; the lode in the 90 is worth 30l. per fathom. The winze below the 90 is looking well, worth 28l. per fathom, and the two stopes in the back of the level are worth together 58l. per fathom. The last four-weekly sale was made on July 5, and realised 615l.

Grogwinion, 2¼ to 3; the balance-sheet will be issued next week. It is said that owing to the continued low price of ore the profit on the half year's working will be small. The prospects of the mine are fairly good, but what is most wanted is a better price for lead. Wye Valley, 1½ to 2; there is a steady and continuous improvement in the bottom of this mine, which is considered satisfactory by the manager, and it is believed that the run of ore ground now entered upon will prove equal to anything hitherto seen in the mine. West Wye Valley, 2 to 2¼; the continued dry weather prevents ore being dressed and sold, but there is a large quantity ready broken, and a few showery days would soon supply ample motive-power. The recent "twist" in the lode at the 40 has given out, and the end is now again driving in good ore. Caron, 2 to 2½; the large water-wheel is completed, and crushing mill fixed, and everything will shortly be ready to commence dressing ore. The underground workings are progressing well. St. Harmon, 2 to 3; there has been a satisfactory improvement in the 67 east, and also in the stopes in the 35, and prospects generally are better than for some time past. Hartington Moor, 1½ to 2; Mawston, 50 to 60; prospects continue to improve. Red Rock, 2 to 2¼; the new discovery in the 10 east has been cut into for upwards of 6 ft., and shows a splendid lode, with a lot of ore in it. The other wall of the lode has not yet been reached, so it is impossible yet to place a proper value upon it, but, so far as seen, it is likely to prove of great importance, and greatly increases the value of the property. The other discoveries in the deeper workings still maintain their productiveness. South Cwmystwith, 2 to 3; it has just been unanimously agreed to raise 3000l. new capital to extend the deep levels into the heart of the mountain. With the addition of new shares the capital of the company will still be small, only 15,000l. in all.

Pant-y-Mwyn, 3½ to 4: it is reported that another rich course of lead ore has been inter-sected. The prospects are considered good, as the vein is very regular, producing in some places almost solid lead ore, and improving in depth. It is stated that "the ore fetches about 11l. 10s. per ton, and that upwards of 200 tons has recently been sold." Pateley Bridge, 1¼ to ⅝; the agent advises "a great discovery in the 30 east on Rake Vein, which to all appearances has entered into a great body of ore; the present end is in ground whole to surface."

Subjoined are the closing quotations:—

Assheton, ¾ to 1¼; Devon Great Consols, 2½ to 3; East Caradon, ¼ to ⅛; East Van, 3¾ to 4⅛; Glenroy, ⅜ to ⅝; Glyn, 15s. to 15s; Great Laxey, 17½ to 18½; Hingston Down, ⅛ to ⅜; Leadhills, 3¼ to 3½; Marke Valley, ⅝ to ⅞; Parys Mountain, ⅜ to ⅝; Pateley Bridge, 1¼ to 1¾; Penstruthal, 3 16ths to 5-16ths; Roman Gravels, 7⅛ to 7¾; Rookhope, 17s. to 19s.; Tankerville, 3 to 3¼; Tincroft, 8 to 10; Tyn-y-fron, 1¼ to 1¾; Van, 20 to 22; West Assheton, 2⅛; West Tankerville, ⅛ to 3⅛; West Basset, 4 to 5; West Pateley, 2 to ⅜ to ⅝; Birdseye, ⅜ to ⅝; Blue Tent, 2¾ to 3; Cape Copper, 31 to 32; Cedar Creek, ¼ to ⅜; Chontales, ⅜ to ⅝; Colorado United, 5⅛ to 5½; Don Pedro, ⅜ to ⅝; Eberhardt and Aurora, 6¼ to 6¾; Exchequer, 1-16th to 3-16ths; Flagstaff, ⅛ to ⅜; Frontino and Bolivia, 1¾ to 2¼; Hultafall, 4 to 5; I.X.L., 1-16th to 3-16ths; Javali, ⅜ to ⅝; Kapanga, ⅞ to 1⅛; Last Chance, 1 to 1⅛; New Quebrada, 1⅞ to 2¼; Oregon Pref., 4 to 4¼; Pestarena, ⅛ to ⅜; Port Phillip, ⅛ to ⅜; Richmond Consolidated, 12¾ to 12⅝; South Aurora, ⅛ to ⅜; Tecoma, ⅛ to ¼; United Mexican, 3¼ to 4.

COLLIERIES.—With the end of the Congress, the return home of the plenipotentiaries, and the account they have been able to give of their work, which promises to lay the foundation of some years of European peace, better times may be looked for as regards collieries and shares in colliery companies. The baneful influence exercised over all business by the uncertainty as to the future which has so long been felt, immediately succeeding a depression of manufacturing industries, produced by the extraordinary and unnatural inflation and over production of 1872 and 1873, has cleared the market of many mushroom companies floated during those abnormally prosperous years, and the return of fair trade will find none but the more substantial and successful companies left to benefit by the improvement. Hence the advantages which will be derived by these few well grounded companies will be greater than if the past three years had been ordinarily prosperous ones. The shares of the best collieries in the market should, therefore, be well worthy of the attention of those—and there are many such—wise ones who realise the fact that handsome interest may be obtained with excellent security from home industries, and we shall be much suprised if we do not see a rapid and steady upward movement in these shares.

The home demand for fuel is at present still very much below what it should be, but the continued growth of shipments abroad keep the markets clear of stock, and thus as the steel, iron, and other manufacturing trades become more lively the coal trade must of necessity be most favourably influenced. South Wales as usual stands to the fore as the exporter of coal, having last week shipped 125,000 tons, which exceeds its coal exports of any previous similar period. A greatly improved demand is springing up in South Wales for anthracite coal, its suitability for steam purposes when used in the improved furnaces recently invented ensuring for it a large and constantly increasing consumption. The anthracite coal of South Wales is of an exceptionally high quality, and will always command a preference over that from any other known anthracite field in the world. The Ynisceedwyn Company, which owns the largest anthracite colliery in South Wales, besides the well-known and highly valuable iron and steelworks, finds that the orders in its agents' hands amount to more than all the coal which can at present be raised, and as the company can calculate on a profit of 2s. per ton, even at present prices, its prospects are in the highest degree promising.

General exports of coal have been again for the last week considerably in excess of those of the previous week, the figures being 414,206 and 276,660 respectively. Inland trade has been somewhat dull, but shows signs of quiet improvement. Chapel House reports are this week very favourable. It is a pity the promised output of 1000 tons per day has not yet been reached, for we understand the company is obliged to decline a great deal of good business owing to the very large demands for its coal. This, however, is a negative misfortune, which time will very quickly remedy, for the second new engine is now completed, and one of the new shafts is within 20 yards or so of the deepest and most valuable seams of coal on the property. With the extensive development which is now nearly attained the colliery will be equal to all demands on it, and should be one of the most prosperous in the kingdom. The works are stated to be progressing satisfactorily at Altami, but there is no particular change to report. The shares close at 3¾ to 4. Llay Hall are at 6 to 8. Business is increasing satisfactorily. Cardiff and Swansea, ⅝ to ⅞: New Sharlston, 3 to 4; Newport Abercarn, 4 to 4¼; Thorp's Gawber, 2¼ to 2¾.

At the Truro Ticketing, on Thursday, 2095 tons of copper ore were sold, realising 7252l. 8s. 6d. The particulars of the sale were—Average standard, 90l. 7s.; average produce, 6⅞; average price per ton, 3l. 9s.; quantity of fine copper, 144 tons 1 cwt. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
June 20	1542	£ 88 1 0	7¼	£3 12 0	10s. 0d.	£50 0 0
July 4.	1439	86 17 0	7⅛	3 13 6	10 0	50 0 6
„ 18.	2095	90 7 0	6⅞	3 9 0	10 1	50 7 0

Compared with the last sale, the advance has been in the standard 7s., and in the price per ton of ore about 6d.

MESSRS. PIXLEY and ABELL—GOLD.—The arrivals since our last circular have not been sufficient to supply the export demand, and 236,000l. in bars and 1000 sovereigns have been withdrawn from the Bank. The Don, from the West Indies, brought 10,000l.; the Elbe, from the Brazils, 29,000l.; and the P. and O. steamer Gwalior, 16,700l. There is still enquiry for Paris. The P. and O. steamer Venetia took 60,000 sovereigns yesterday for Malta.—SILVER.—In the early part of the week, there being no demand whatever for India, some amount of silver was sold at 52 9-16thd. per oz. standard, entirely for the Continent, including the bars brought by the Don from the West Indies, and some portion of those per Britannia from the Pacific; subsequently, owing to the higher rate obtained yesterday for the India Council bills, some enquiry arose for the East, and the balance of the silver per Britannia realised 52 13-16thd. per oz. standard. The Don from the West Indies has arrived with 30,000l., and the Britannia from the Pacific with 75,000l. There are no shipments of silver to India per P. and O. steamer Venetia leaving Southampton this day.

*** With this week's Journal a SUPPLEMENTAL SHEET is given, which contains:—Original Correspondence: The Rating of Mines (T. F. Hedley); Canadian Mining Notes—No IV.; the Virneberg Mine, on the Rhine; Copper Smelting in California (J. Moshiemer); Richmond Mining Company (J. P. Bridgwater, J. Bayliss); Richmond Consolidated Mining Company (J. Bayliss); the Port Phillip Company; Cyprus, Present and Future (W. White); Rock-Drills; Automatic Ore Dressing; Blasting with Lithofracteur (S. Williams); Treatment of Copper and Silver Ores (A. Drouin); New Motor—the Bradley Promethor; the Coal Supply *via* Boston (W. J. Thompson); Colliery Explosions; Mining Companies, and their Prospects; Reminiscenses—No. XI; South de Ereshy Mine; Pant-y-Mwyn (Lead), Flintshire—Gold and Silver Mining in Canada; the Paris International Exhibition—No. X.—Foreign Mining and Metallurgy—the Scotch Mining Share Market—Patent Matters—Meetings of the Bolivar Railway, Almado and Tirito, and West Mostyn Companies, &c.

PATELEY BRIDGE—GREAT DISCOVERY.—A great and important discovery has taken place during the week on the Rake vein. The agent reports—"The 30 east, on Rake vein, has entered into a great body of ore, the present end being in ground whole to surface. The stopes and metal pitches throughout the mine continue to turn out profitable quantities of ore."

WEST PATELEY.—The different points of development are opening out most satisfactorily. The 26 east is gradually improving, both in size and value. The Craven Cross shaft is making good progress. During the week several large rocks of solid ore have been raised, which must have come from the main lode. The lode in the 63 is 2 ft. wide, carrying good branches of bed ore. The stope is valued at 25 cwts. per fathom. On surface all machinery is in good order.

WEST TANKERVILLE MINING COMPANY.—The annual ordinary general meeting of shareholders was held at Wolverhampton, on Thursday (Mr. J. J. Pyne in the chair), when the report and accounts were presented and passed. Mr. Samuel York was re elected a director, and Mr. E Ashmead auditor. The meeting was then made Special, to consider the advisability of raising fresh capital, by reconstruction or otherwise. After some discussion (fuller particulars of which will be given in next week's Journal), the directors were requested to call a general meeting at Wolverhampton for the purpose of winding up the company with a view to its reconstruction, and a committee of shareholders was appointed to confer with the directors as to the best plan to adopt. The proceedings terminated with a vote of thanks to the Chairman.

PLACEVILLE.—A report from the manager, in another column, states that the explorations in the old works are progressing in a very satisfactory manner, and with the drift in the bottom of the new shaft have already resulted in laying open 8000 tons of quartz available for stoping. This is exceptionally favourable, as the operations were commenced only two months ago.

ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY.—We refer our readers to the report of the extraordinary meeting of this company, and to the interesting reports from the mines to June 6 in this week's Journal. The shareholders unanimously authorised the issue of 8200 10 per cent. mortgage debentures, which are to be offered in the first instance to the shareholders. Now that the prospects of rich ore being laid open in the Mina Grande, Crux Verde, Virgen, Providencia, and Tirito are so strongly confirmed as they are by the above reports, the extra capital will be of the most essential importance, and the shareholders will doubtless support the executive liberally. As the rainy season was daily expected we may expect greatly improved reports from these extensive mines.

THE MARIPOSA ESTATE.—An interesting paper upon the late operations on the Mariposa estate has been read before the American Institute of Mining Engineers by Mr. Charles M. Rolker, M.E., of Reno, Nevada, and has now been reprinted in pamphlet form. The estate, as is known to most readers of the *Mining Journal*, is situated in Mariposa county, California, about 170 miles south-east of San Francisco. The Mexican Government grant to Juan B. Alvarado was purchased in 1847 by Col. Fremont, to whom a United States patent was issued in 1856. It passed to the Mariposa Company in June, 1863, and through a varied existence of work and temporary inactivity has as yet been kept as an undivided property, and rests at present with the Mariposa Land and Mining Company of California. Both the geology and the mining are very fully referred to, and there are illustrations which render the descriptions particularly lucid. The memoir is well worthy of perusal.

Mr. James Waddell has been appointed official liquidator of the Thames Steam Ferry Company.

TULA SILVER.—This composition, which was long kept a secret, has been discovered at last. It consists of nine parts of silver, one part of lead, and one part of bismuth. The metals, in the proportions stated, are melted together. The addition of sulphur gives the beautiful steel-blue tint for which it is so highly prized.

ZINC ORES.

ARMAND FALLIZE,
INGENIEUR-CIVIL, A LIEGE (BELGIUM),
BUYER
1.—CARBONATED AND OXYDED ZINC ORES (CALAMINE, &c.)
2.—ZINC AND LEAD ORES MIXED TOGETHER, BUT DRESSABLE KINDS ONLY

CAPPER PASS AND SON, BRISTOL
PURCHASERS OF
LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, HARD LEAD, BRASS SLAGS AND ASHES, COPPER REGULUS, MATTE, SCORIA, TIN ASHES, TERNE ASHES, &c., and MIXED ORES or REFUSE, containing LEAD, COPPER, TIN, or ANTIMONY.

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EXECUTE COMMISSIONS FOR THE PURCHASE AND SALE OF SCOTCH PIG-IRON WARRANTS.
Sole Agents in Scotland for—
SPEAR AND JACKSON, Etna Steel Works, Sheffield; and JOHN SHAW, Yorkshire Wire Rope Works, Sheffield.
Steel and Steel Tools, Pig and Manufactured Iron, Hemp and Wire Ropes all purposes, Indiarubber Goods, and Furnishings of every description for lieries, Founders, Engineers, Saw-millers, &c.

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It is manufactured entirely pure, and of the best and strongest qualities, into MILLBOARD, for STEAM, WATER, GAS, and ACID JOINTS,

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SMITH, FLEMING, AND CO.,
17 AND 18, LEADENHALL STREE
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TO MINING DRILL-MAKERS, &c.
WANTED, a DRILL for OPEN QUARRY WORK, for use in moderately soft limestone.
Address, with full particulars, to New Sombrero Phosphate Company, 1, Leadenhall-street, E.C.

WANTED, a GENTLEMAN, to ASSIST in the FORMATION of a LEAD MINING COMPANY. One who could introduce capital, or place shares to the extent of £4000 would be treated with on very liberal terms.
Address, "Dwmffyn," Messrs. Deacon's, 154, Leadenhall street, E.C.

TO BE SOLD, OR LET, SEVERAL VALUABLE GOLD MINES, in the neighbourhood of the ST. JOHN DEL REY MINES, BRAZIL.
Apply to Mr. T. C. KITTO, 5, Ferris Town, Truro.

CAPTAIN ABSALOM FRANCIS, MINING AGENT, ENGINEER, AND SURVEYOR, GOGINAN, ABERYSTWITH.
FOUR MINES CERTAIN FOR A RISE.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
July 16	Isle of Man	140	£15 2 0	Nevill, Druce, and Co.

BLACK TIN.

Date.	Mines.	Tons c. q. lb.	Price per ton.	Amount.	Purchasers.
July 16	West Godolphin	16 1 1 1	£33 12 6	—	—

PERUVIAN TIN ORE SOLD IN LIVERPOOL.

Date.	Tons.	Price per ton.	Purchasers.
July 15	6¼	£33 10 0	Bolitho and Sons.
	3	33 2 6	Williams, Harvey, and Co.
	½	25 0 0	ditto
17	...	33 0 0	Bolitho and Sons.
	¼	32 0 0	Daubuz and Co.

COPPER ORES.

Sampled July 3, and sold at the Royal Hotel, Truro, July 18.

Mines.	Tons.	Price.	Mines	Tons.	Price
Devon Great Consols	85	£1 7 6	South Caradon	53	£9 11
ditto	75	1 8 6	ditto	52	5 6
ditto	73	1 7 6	Gunnislake (Clitters)	84	4 10
ditto	71	1 7 6	ditto	82	3 19
ditto	68	1 7 6	ditto	77	3 18
ditto	61	3 17 0	ditto	74	4 5
ditto	57	1 10 0	Marke Valley	105	2 1
ditto	56	3 9 6	ditto	60	1 18
ditto	44	1 10 0	ditto	54	2 17
ditto	41	1 10 0	ditto	42	3 14
ditto	34	4 9 6	ditto	39	3 13
South Caradon	85	3 12 0	Glasgow Caradon	78	3 19
ditto	66	5 2 6	ditto	62	3 17
ditto	58	4 0 6	ditto	60	3 14
ditto	57	9 19 6	Hingston Down	63	1 16
ditto	55	3 7 6	ditto	50	1 16
ditto	54	3 18 6	New Consols	20	1 0

TOTAL PRODUCE.

Devon Great Con.	665	£1309 17 0	Glasgow Caradon	200	£ 770 6
South Caradon	480	2626 18 6	Hingston Down	113	203 8 6
Gunnislake, &c.	317	1324 12 6	New Consols	20	20 0
Marke Valley	300	997 7 0			

Average standard	£ 90 7 0	Average produce	6⅞
Average price per ton		£3 9 0	
Quantity of ore	2095	Quantity of fine copper 144 tons 1 cwt.	
Amount of money		£7252 8 6	
LAST SALE.—Average standard	£ 84 17 0	Average produce	7⅛
Standard of corresponding sale last month, £ 88 1 0		Produce, 7¼	

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	481	£1724 4 3
Grenfell and Sons	164	1180 1 6
Nevill, Druce, and Co.	494½	1345 19 9
Williams, Foster, and Co.	553½	2195 6 0
Mason and Elkington	272	806 7 0
Total	2095	£7252 8 6

NO SALE on Thursday next, July 25.

Copper ores for sale on Thursday week, at Tabb's Hotel, Redruth.—Mines and parcels.—Mellanear 401—West Tolgus 310—Levant 222—East Pool 202—South Crofty 173—West Seton 125—Wheal Owles 81—West Godolphin 38—Wheal Basset 28—Carn Brea 28—West Basset 26—North Treskerby 20—South Condurrow 20—Wheal Kitty 16—Dolcoath 13—Penstruthal 9—Penberthy's Ore 7.—Total, 1719 tons

Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be *filed* on receipt; it then forms an accumulating useful work of reference.

SIR,—In the Notes on "Rock Drilling and Air-compressing Machinery," in last week's Journal, I observe an error in the figures—22,663 should be 2663 lineal feet—the distance of tunnel driven up to the date you give.—J. G. CRANSTON: *Newcastle upon-Tyne, July* 16.

Received,—"S. C." (Bilboa)—"M. D." (York)—"H. T." (Dudley)—"L. G." (Ramsgate)—"Shareholder" (York) should attend the Richmond meeting on Tuesday, and ascertain the particulars he requires—"J. W. W." (Penryn)—"Reader" (Redruth)—"J. R. C." (Brighton)—"Shareholder" (Wheal Basset)—"An Old Subscriber" (Windsor): We will endeavour to procure the information for next week's Journal—"Amanuensis": Send the paper; if not approved it will be returned—"Shareholder" (Wheal Peevor).

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, JULY 20, 1878.

COAL AND IRON TRADE PROSPECTS.

From all parts of the kingdom we have information to the effect that the coal trade, above all others, is in a very depressed state, that the miners are not working more than three or four days a week, whilst their wages are lower than they have been for several years. It is also stated that so low has the price of coal become, owing to its abundance and the competition that must inevitably result in any business where the power of production is very much in excess of the requirements of consumers, that colliery owners are not only making no profits, but in many districts are carrying on their works at a loss. This is certainly a serious state of things for all the parties concerned, and the future is anything but promising, for we cannot see how such a change can take place as would find sufficient work to keep the coal mines of the country fully employed, or anything approaching to it. Many persons, however, are of opinion that there will before very long be such an improvement in the iron trade as will lead to the many furnaces now standing in the northern and other parts of England being put in blast, and so causing a marked increase in the consumption of coal. But were all our furnaces again in blast we should still be able to raise a great deal more coal than would be required for ironmaking and every other purpose. This, as we have on some previous occasions noticed, is the result of the extraordinary demand there was for coal a few years ago, commencing towards the end of 1871, and culminating in the first quarter of 1873, after which it gradually declined, until at the present time it is lower in price than it has been since 1870. Fortunes were then rapidly made, miners' wages rose to more than twice their present rate, and there were many who believed there would be a long continuance of this happy state of things. The consequence was that there was quite a rush on the part of capitalists to become connected with colliery property, and strong inducements were held out to them to do so. Many collieries changed hands, and became the property of limited liability companies, and this in itself would have done no harm, but, unfortunately, nearly all parts of the kingdom were ransacked to find eligible fields of coal, and these were leased at rates previously unknown or dreamt of by the lessors. Sinkings were commenced, but by the time the coal was reached at the majority of the new collieries the trade came back to what may be called its original state, the demand declined, prices rapidly fell, markets became overstocked, coal became a drug, and sold at less than the cost of getting. This, indeed, is the state of things at the present time, whilst even now fresh collieries are being sunk in many districts in both England and Wales. Those who have engaged in these new speculations can scarcely have been acquainted with the number of collieries opened out during the last two or three years, or the quantity of coal they are capable of producing, otherwise we think they would have hesitated before expending large amounts of money for which even the return of a very moderate percentage for a long time to come is very doubtful. As it may interest such persons, as well as others, we give the number of collieries opened out from 1872 to the close of 1877, as follows:—

	Number in 1872.	In 1877.
Northumberland, North Durham, &c.	210	212
South Durham	147	210
Yorkshire	431	533
Derbyshire, Nottingham, &c.	187	412
North Staffordshire and Cheshire	212	248
South Staffordshire	319	476
Lancashire, North and East	326	344
Lancashire and North Wales	172	301
Gloucester, Somerset, &c.	215	394
South Wales	284	312
Scotland, West	217	344
Scotland, East	252	351
Ireland	29	38
Total	3001	4175

There were in the course of five years an increase of no less than 1174 collieries, most of them on a very large scale. Now, in 1872 the 3001 collieries raised 123,497,316 tons of coal, being equal to 41,152 tons to each mine, whilst the 4175 collieries in 1877 only produced 134,179,968 tons, seeing that no more was required, which led to many pits being worked on short time. As the collieries in 1877 were in their entirety much larger than those of 1872, they could have raised singly a much larger tonnage. But even with the average yield of 1872 the mines in 1877 would have given 171,809,600 tons, or 37,629,632 tons more than was raised or required. Taking the collieries we now have, their productive power will be fully equal to 200,000,000 tons a year, With the best of trade, such a quantity is not likely to be required for ironmaking and every other purpose. This, as we have on some previous occasions noticed, is the result of the extraordinary demand there was for coal a few years ago, commencing towards the end of 1871, and culminating in the first quarter of 1873, after which it gradually declined, until at the present time it is lower in price than it has been since 1870. Fortunes were then rapidly made, miners' wages rose to more than twice their present rate, and there were many who believed there would be a long continuance of this happy state of things. The consequence was that there was quite a rush on the part of capitalists to become connected with colliery property, and strong inducements were held out to them to do so. Many collieries changed hands, and became the property of limited liability companies, and this in itself would have done no harm, but, unfortunately, nearly all parts of the kingdom were ransacked to find eligible fields of coal, and these were leased at rates previously unknown or dreamt of by the lessors. Sinkings were commenced, but by the time the coal was reached at the majority of the new collieries the trade came back to what may be called its original state, the demand declined, prices rapidly fell, markets became overstocked, coal became a drug, and sold at less than the cost of getting. This, indeed, is the state of things at the present time, whilst even now fresh collieries are being sunk in many districts in both England and Wales. Those who have engaged in these new speculations can scarcely have been acquainted with the number of collieries opened out during the last two or three years, or the quantity of coal they are capable of producing, otherwise we think they would have hesitated before expending large amounts of money for which even the return of a very moderate percentage for a long time to come is very doubtful. As it may interest such persons, as well as others, we give the number of collieries opened out from 1872 to the close of 1877, as follows:—

Now that the peace of Europe has been assured there is a probability that there will be a considerable improvement in the iron trade generally, and signs in that direction even now are not wanting. The growing demand for steel rails is likely to cause considerable increase in the production of hematite pigs. It is true that a large number of furnaces are out, and that the stocks of ordinary pigs are considerable, but the current opinion of those acquainted with the trade is that we have about reached the lowest point, and that the last quarter of the year will be far the best. In finished iron in some of our districts there is now more doing, and in Sheffield there has been a much healthier tone during the present week, and an increased number of men have been employed at the mills. It is understood that in North Lincolnshire, where at least half the the furnaces have been out for many months, several of them are likely to be put in blast before long. At the present time prices are very low for iron of every description, and any change that may take place will be gradual, and this should be taken into account by the workmen. It is owing to the low price at which Bessemer makers are now taking contracts that they are able to keep their mills fully going, and competing with continental manufacturers, who pay much lower wages to their workpeople, and get them to work much longer hours. Such competition is sure to continue, so that it will be to the interests of our English workmen to act in harmony with their employers, so as to enable them to maintain their present position, for a small sacrifice at the present time will lead to a permanent future advantage to them. The same remark applies with fully as much force to our miners, if not more, and they should recollect that the colliery owners that employ them have to meet those of Germany and other parts of the Continent in several of their best markets, and have to sell below them to do business, which at times has been done at a loss. To maintain our position as exporters we must have at present in particular cheap iron, and that can only be produced by cheap coal; with these we fully believe we can now look forward to a better state of things, although, as we have before said, an improvement in our two great national industries, coal and iron, will be but gradual for some time to come.

THE COPPER TRADE.

During the quarter ending June 30 the quantity of copper ore, the produce of Cornwall and Devonshire, sold at the Cornish Ticketing, was 11,746 tons, which contained 859 tons 9 cwts. fine copper, and realised 41,992*l.* 12s., being equal to an average of 3*l.* 10s. 6d. per ton of ore, and 48*l.* 17s. per ton of copper in the ore. During the same period the British, colonial, and foreign ores sold at Swansea amounted to 9185 tons, which contained 777 tons 6 cwts. of fine copper, and realised 41,755*l.* 14s. 6d., being equal to an average of 4*l.* 11s. per ton of ore, and 53*l.* 14s. per ton of copper in the ore. The average produce of the ore sold at Cornwall Ticketings was 7 5-16 per cent., whilst that sold at Swansea gave an average produce of 8¼ per cent. From this it will be seen that the aggregate sales by ticket were 20,931 tons of ore, containing 1636 tons 15 cwts. of fine copper, and realising 83,748*l.* 6s. 6d. The subjoined is a summary of the periodical sales at the Cornwall and Swansea Ticketings respectively. The ores sold at the Cornwall Ticketings were—

Date.	Standard.	Prod.	Price.	Per unit.	Tons.	Fine cop.	Amount.
April 4...	£ 84 0 0	8¾...	£4 3 0...	10s. 1 d.	1565	128t. 8c..	£ 6,485 10 6
18...	87 9 0	7 ...	3 7 6...	9 7½...	2836	198 10...	9,555 9 0
May 2...	83 2 0	7¾...	3 14 0...	9 6 ...	1653	128 4...	6,107 17 6
23...	87 13 0	6¾...	3 5 0...	9 6 ...	2517	172 11...	8,207 4 0
June 6...	87 13 0	7¾...	3 15 0...	10 1½...	1433	106 7...	5,383 9 6
20..	88 1 0	7¼...	3 12 0...	10 0 ...	1742	125 9...	6,253 1 6
Total for the quarter					11,746	859 9...	£41,992 12 0
Quarter ending March, 1878					12,330	805 18...	45,407 12 6
Quarter ending December, 1877					13,260	920 3...	46,619 18 0
Quarter ending September, 1877					14,111	983 2...	53,320 11 0
Total for the year					51,447	3568 12..	£187,340 13 6
Showing a quarterly average of					12,862	892 3...	46,835 3 6
Corresponding quarter June, 1877					13,013	913 19...	57,041 9 6

The ores sold at the Swansea Ticketings were—

Date.	Standard.	Prod.	Price.	Per unit.	Tons.	Fine cop.	Amount.
April 9.	£79 13 0	9½ ..	£5 4 6..	11 s.	3407	323t. 14c.	£17,799 19 0
30.	79 18 7	7 7-16	3 19 1...	10 8	1815	142 8½	7,579 11 6
May 21.	77 0 3	7⅞ ...	4 0 5...	10 2½...	2621	205 10 ...	10,541 11 0
June 11.	81 12 4	8⅜ ...	4 14 0...	11 0 ...	1242	105 13½	5,884 13 0
Total for the quarter					9,185	777 6 ..	£ 41,755 14 6
Quarter ending March, 1878					13,076	958 2 ...	56,469 10 6
Quarter ending December, 1877					10,236	724 3 ...	40,767 11 0
Quarter ending September, 1877					17,972	2220 13 ...	133,294 18 0
Total for the year					50,469	4680 4 ..	£272,287 14 0
Showing a quarterly average of					12,617	1170 1 ...	68,071 18 6
Corresponding quarter, June, 1877					11,016	1828 7 ...	124,088 13 6

THE UTILISATION OF BLAST FURNACE SLAG.

For several years past the question of utilising the immense quantity of slag from the blast furnaces has been frequently discussed, and various ways proposed by which it could be converted into a commercial product of value, instead of being cast aside as something worse than useless. Amongt other things, it has been proposed to convert it into paving blocks, in imitation of stones for building purposes, pulverising it into cement, and also by chemical addition to make it to resemble marble. But all these proposals have fallen to the ground without being tried, or if any of them have they have been speedily abandoned, either as unprofitable or impracticable. We do know that a good deal of slag is used as metal for the roads, but a great deal more cannot even be made available for that purpose, and consequently becomes a vast useless and unsightly encumbrance, occupying ground that could be made profitable. As the constituents of slag and glass are to a considerable extent similar, it has been suggested that glass manufacturers would find it greatly to their advantage to use the slag rather than importing the ingredients of which it is composed, as they now have to do. But this they have not done owing to some difficulties, amongst them being the great heat required in melting slag that has become solidified. This, however, could be overcome were the slag taken in its fused state direct to the glassworks, which should be close to the blast furnaces. There is no doubt, then, that glass could be easily made from slag, with the addition of carbonate of soda and sand, and we believe that on a small scale it has been so produced, but more as an experiment than otherwise. But it does not require much knowledge of the subject to be convinced that were slag employed glass would be produced at a far less cost than at present, for we remember that on the occasion of the meeting of the Iron and Steel Institute at Leeds, when the question was being discussed, Mr. SMITH remarked that if any glass manufacturer came to Barrow they would give him three quarters of a million of slag a year on the simple easy terms of taking it away from the furnaces.

The subject, like many others of more or less importance, has been left to take its chance after being frequently broached at scientific and other meetings, but it now appears to have been taken up by a foreign gentleman, M. JOSEPH ROSSENEGER, of Innsbruck, who has taken out a patent for converting slag into glass. His invention, he states, has for its object the using of slag as the raw material, and working it in either solid or a liquid state for the manufacture of glass. A slag consists principally of silica, lime, and alumina; it could under certain conditions be brought into the pot in a fluid state from the furnace, so saving a good deal of fuel; or the slag can be used in a granulated state, and mixed with other ingredients, and so formed into homogeneous glass. The working of the slag after it has been analysed is done either in a cold or a melting state. If cold it is crushed by ordinary mechanical means, or on the other hand it is granulated in a hot state by means of water. Then certain measured quantities are taken and put into the glass tank, pot, or vessel, and the other necessary ingredients added, when the mixture is worked in the usual way. The analysis of the slag shows what amount of other material is required, a highly siliceous slag requiring less sand than when the reverse is the case. If the slag is put into the vessel in a hot or melted state from the furnace, the additional material is added, there being layers of slag and layers of the other ingredients, so that there can be a thorough admixture of all. As the slag colours the glass owing to the metal it contains (manganese and oxide of iron), the value of colouring matter is saved. The glass produced by the process has proved to be very strong and of great resistance. The manganese and oxide of iron give a more or less brown, green, or amber-coloured glass, but the dark colour can be reduced by manipulating the crushed or granulated slag, so that the glass can be made quite clear.

M. ROSSENEGER, in the manuscript of specification, claims for his invention—1. The use of cold or hot slag as the raw material for making glass.—2. The granulating or crushing of it by means of water.—3. The means of working the slag so as to produce clear glass.—4. The introduction into the melted slag of the additional materials required in layers or strata. As the invention, we understand, will be carried out, we certainly cannot see why it should not be successful. Our ironmasters, too, were they to take it in hand, would soon find that it would be to their advantage to do so. This was the opinion of Mr. SNELUS, who is a very high authority in all matters relating to our blast furnaces, for not so long since he gave it as his opinion that the proposal to make glass from slag was a simple and sensible method of utilising a product hitherto wasted. He did not see why they should not take the molten slag away from the blast furnace in the same way that they took the molten iron. It is evident that there would be no difficulty whatever in adding the required ingredients into the slag in its fluid state, and thoroughly incorporating the entire mixture. We should then have glass at a very cheap rate, whilst the unsightly heaps of valueless material now covering valuable ground would become an article of economical value, and be the means of greatly reducing the price of an article largely consumed by the public. We hope before long to be able to state that the utilisation of slag for the production of glass has become an accomplished fact.

AMERICAN RAILROADS, AND AMERICAN IRON.

It appears that the extent of new railroad opened in the United States in 1877 was 2177 miles. The corresponding addition made in 1876 to the American railroad network was 2657 miles; in 1875, 1758 miles; and in 1874, 2305 miles. In the four previous years new lines were opened as follows year by year:—In 1870, 6070 miles; 1871, 7608 miles; 1872, 5720 miles; and 1873, 4069 miles. The last four years have formed a period of collapse, following the period of inflation represented by 1870, 1871, 1872, and 1873; and it will be seen that there has been no real recovery from the exhaustion to which the American railroad interest has been a prey since the stoppage of the Northern Pacific Railroad in September, 1873. Very nearly five years have now rolled away since that memorable month, but still the work of American railroad building has not by any means regained the remarkable activity which it gradually acquired after the close of the civil war of 1861-65. However, American railroad development is, after all, no doubt proceeding in reality quite fast enough, as, if American railroads are now proceeded with with less activity, they are constructed with more judgment and more regard to a satisfactory return being obtained upon the capital embarked in them. The day of reckoning which came upon American railroads in September, 1873, was certain to arrive sooner or later; but the storm having once burst the atmosphere necessarily became somewhat clearer, and American railroads are beginning now to rest upon a sounder basis than that upon which they reposed seven or eight years since. The lessons of prudence which the American railway world has had to learn have been taught with stern severity, but American railroad men are probably now all the better for having had to learn them. It is only to be hoped that they really have learnt them.

The statistics which have accumulated with respect to American railroads certainly exhibit marvellous results. While in 1830 the United States had only 22 miles of line, the corresponding total had risen in 1840 to 2818 miles, in 1850 to 9021 miles, and in 1860 to 30,635 miles. In 1870 there was a further advance to 52,914 miles. In the first period of ten years the progress effected averaged 279 miles per annum; in the second decade 620 miles per annum, in the third decade 2161 miles per annum, and in the fourth decade 2228 miles per annum. Upon the whole, it will be seen that during the 40 years ending with 1870 inclusive the work of American railway establishment advanced with steadily increasing vigour; and the average progress made during the ten years ending with 1870 inclusive must be regarded as highly astonishing, when we remember that in 1861, 1862, 1863, 1864, and 1865 the United States were convulsed by a civil war of the most terrible character. But it was not until after 1870 that American railroad building really acquired its full—not to say its vertiginous—activity. During the seven years ending with 1877 inclusive the work of construction advanced at the average rate of 3756 miles per annum, notwithstanding that business in the United States has been suffering generally from great depression since 1874.

But the American railroad panic of 1873 has undoubtedly involved great difficulties and embarrassments to American ironmasters. In 1868 2979 miles of railroad were completed in the United States; in 1869, 4675 miles; in 1870, 6070 miles; and in 1871, 7608 miles. It is true that a portion of the rails and other *materiel* required for the establishment of this vast amount of line was imported from abroad, and especially from Great Britain. Still, the rapid advance made with American railroad construction in 1868, 1869, 1870, and 1871—years in which more and more miles were continually being built—induced unduly sanguine hopes and expectations in the breasts of American ironmasters. They appear to have fairly lost their heads, and to have sunk ever so much more capital than they ought to have embarked in the establishment of blast-furnaces and rolling mills. In 1872 the extent of new line constructed in the United States declined to 5720 miles, and in 1873 it further receded to 4069 miles. But it was not until 1874 that American ironmasters began thoroughly to appreciate the fact that their means of production had become excessive, and that they had committed errors of judgment, from which they have not yet recovered.

MACHINE MINING IN CORNWALL.

The disinclination of Cornish miners to take the responsibility of substituting rock-drilling machinery for manual labour in the carrying on of their operations has several times been referred to; but, happily, this apathy is now passing away, and it is probable that at no distant time rock-drills will be as commonly used underground as are stone-breakers at surface. The Beaumont boring machines have been at work at Carn Brea Mines above 12 months, with a result which must be interesting and important to all miners to learn, even if it should not prove a strong inducement to the adventurers and agents of other large mines to obtain the services of such machines to rapidly develope their property. The company commenced to drive at Carn Brea on June 18, 1877. Since that time they have driven 34 fms. in the 226 east of Highburrow west, 64 fms. in the 226 west of Highburrow west, 48½ fms. in the 213 west of Highburrow west, and 45 fms. in the 238 west of Highburrow east, making a total of 191½ fms. The levels are large ones, measuring from 8 ft. to 8 ft. 6 in. square, and taking the average as 8 ft. 3 in. there would be an extent of 78,203¾ cubic feet; and with 14 ft. to the ton of stuff we find that altogether 5586 tons of stuff have been broken during the 12 months working. But during these 12 months there have been stoppages and hindrances through changing the machines from one part of the mine to the other, delays through water being in the mine, &c., which it is calculated would amount to about three months, so that the result obtained has been achieved by nine months actual working.

The speed attained certainly leaves little to be desired, for it will be observed that the work would average about 16 fms. a month for the 12 months, or about 21 fms. for the 9 months. In the 238 end, where they are now driving, they are 67 fms. from the shaft, without any communication whatever for ventilation, and yet the ventilation is perfect; and it is intended to drive 80 fms. further in the same end, without any communication or supply of air beyond what is sent down to work the machines. As a striking proof of what can be done by these machines we may state that they worked a week recently without let or hindrance, and they drove in that week 8 fms. 3 ft., being at the rate of 34 fms. a month; while six men, in the same end, and continuously working, would drive scarcely 6 ft. in a month. It should be borne in mind that it is not necessary to have an 8-ft. lode to work these machines; they can be worked quite as easily in a lode of 4½ ft.. At every blast the end is advanced 3 ft., and all the stuff coming from end 8½ ft. square, from a 3-ft. blast, is brought out to the shaft, and the machine placed ready to work again in three hours.

It is remarked by the West Briton that the Beaumont Company is the only one that has yet taken a contract to drive ends in the Cornish mines, so that we have no means of comparing their work with that of other companies; but the speed with which they have driven the ends at Carn Brea dwarfs into insignificance the results which have been attained by the boring machinery used at other mines so far. It is, perhaps, right to add that the only explosive regularly used by these machines is dynamite, which has it is said been found in use and by practical results to be the most powerful,

and at the same time the most economical, explosive that can be used for this purpose. Other new explosives have been tried, only quickly to be set aside in favour of dynamite.

NOTES FORM THE CLEVELAND DISTRICT.

The past month has been fraught with considerable interest to Cleveland. A steady improvement in the pig iron trade has been manifested, more iron having been sold and better prices obtained. A quarterly meeting, at which any advance or deterioration in trade is confirmed, has also been held, and the quickening in enquiries for iron was proved to be general throughout the North of England. Finished iron trade prospects have also become much brighter, more enterprise being shown in the extension of works—the reopening of works which have been closed for years, and on the part of consumers in the giving out of orders. In the meantime, too, the capital of Cleveland has changed its parliamentary representative, owing to the death of Mr. Bolckow, M.P. The new member, Mr. Isaac Wilson, is also an ironmaster. He is chairman of the directorate of Messrs. Hopkins, Gilkes, and Co. (Limited), whose works are of large extent, and give employment to between 3000 and 4000 men. This company begins with the smelting of iron, having four furnaces in operation; carries it through the puddling-furnaces, and so on to its conversion into rails, bars, plates, and angles, and afterwards employs iron in the skilled branches of engineering trades at the Tees Engine Works. Mr. Wilson is also a director of Messrs. Gilkes, Wilson, Pease, and Co., of R. Lloyd and Co., and other ironworks, and a director of the North-Eastern Railway Company. Speaking merely from a trade standpoint, therefore, he is an excellent parliamentary representative for the town that owes its beginning and the continuance of its existence to iron. I may, perhaps, be permitted to make some brief remarks upon the statistics with regard to pig-iron which have been issued since my last letter, and afterwards to the figures certified by the auditor of the books of the board of arbitration with reference to finished iron. First, respecting pig-iron. The decrease in the make of Cleveland iron in the month of June as compared with May was 4773 tons, the total make of this iron being 135,399 tons. But it appears that a greater demand for hematite and spiegeleisen had arisen, and consequently the production of those qualities had been increased, the make in June being 28,990 tons, as against 26,581 tons in May. The net increase, therefore, in the make of iron of all kinds was 2284 tons only. Notwithstanding this decrease makers' stocks have been increased by 4602 tons, but at the same time makers' stocks, where iron was held in bond, were decreased 10,125 tons, and Messrs. Connall and Co.'s warrant stores were also decreased 1511 tons. It will, therefore, be seen that 4750 tons of iron have been sold over and above the make of the month—that is, that a total of 169,019 tons have been disposed of. Shipments are shown to be slightly lower than in May, 30,236 tons having been shipped to foreign ports in June, as against 34,753 tons in May, and 38,572 tons shipped coastwise in June, as compared with 39,290 tons in May. Throughout the month firm prices have been maintained, with an upward tendency. No. 1 now stands at 43s. 6d.; No. 2, 41s.; No. 3, 39s. to 39s. 6d.; No. 4 forge, 38s.; and No. 4 foundry, 38s. 6d. per ton. These prices are subject to the 1 per cent. commission and f.o.b. on Tees or on trucks at works.

The quarterly returns of Mr. Waterhouse, the auditor to the board of arbitration for the manufactured iron trade of the North of England, show a rather encouraging state of things, the total weight of rails, plates, bars, and angles being 19,114 tons in excess of those of the previous quarter. That total was 114,897 tons 9 cwts. 2 qrs. 7 lbs. These weights are taken from the manufacturers' own books, and the only deficiency in them is that they do not fully represent the manufacture of finished iron in the district, as there are two or three small works not in connection with the board of arbitration. At one time the speciality in the manufactured iron trade was rails, now it is plates, the latter forming 54½ per cent. of the total weight, while rails only constitute 7½ per cent. Angles come next to plates, being in the proportion of 20½ per cent., and bars make up 17 per cent. The declaration of continental peace has served to raise the hopes of manufacturers, and the talk of projected railways and bridges in Cyprus is causing Cleveland rail and bridge makers to be sanguine as to orders. After being long talked about, the Britannia Ironworks, which have been purchased by the Skerne Iron Company, are now reopened. When the iron rail trade of Cleveland was at the meridian of its prosperity the Britannia Works were the largest in the district engaged in that trade, and very many orders of great magnitude were executed there. On the decline of that trade it became necessary to close the works. They have continued closed for 2½ years. They are now reopened as puddling-furnaces, and alterations are in course of progress by which the rail mills will be converted into plate mills, and eventually it is understood that bridge making will also be carried on. Already upwards of 300 hands have got to work, though in their palmy days these works employed 1500. Enterprise is also being manifested in other directions. Two foundries are in course of erection and a third is projected at Stockton. The new steelworks of Messrs. Bolckow, Vaughan, and Co., at Middlesborough, are being proceeded with. These are unmistakeable signs of a vitality which is surmounting the depression in which for so long the district has been engulfed. Additional capital is also being expended on the renovation or reconstruction of furnaces which are now out of blast, and some large capitalists go on confidently adding to their stock of pig-iron. Very little or nothing of a favourable nature can be said about coal or ironstone mining. Miners complain on every hand that they cannot live on the wages at present earned. And yet there does not appear to be any hope of improvement. Ironstone mining, which more particularly belongs to this district, is in a very bad state both for employers and employed. The output has not been seriously reduced of late, but the present output does not represent anything like full time for the reduced number of miners engaged. Iron shipbuilding continues to maintain a good position, and several ships have been launched during the month. The latest was on Monday last, when a fine vessel of 2700 tons dead weight was launched from Messrs. R. Dixon and Co.'s yard at Middlesborough. A discussion as to the advisability of sending artisan reporters to the Paris Exhibition, with a view to their reporting principally on manufactures of interest to this district, is engaging attention in iron circles, but it is doubtful whether any united action will be taken. Some of the large firms, however, will probably send representatives from their own works next month. It has been agreed to erect a statue to the memory of the late member for Middlesborough—Mr. Bolckow—in the park which he gave to that town.

TRADE OF THE TYNE AND WEAR.

July 17.—The shipments of best steam coal continue on a large scale, and some of the works are regularly employed. Many large steam and sailing vessels have been loaded with this coal during the past week at the docks on the Tyne and Wear, and shipments have also been good at Blyth and Amble, in Northumberland. The price is, of course, comparatively low, and only the best works have a chance of securing profit. The shipments of gas coal continue fair, and also house coal considering the season; the shipments have been equal to a summer average. Best steam is 10s. per ton, and second-class coals are shipped at 7s. 6d. per ton. Small coals are shipped at Tyne dock at 2s. 6d. per ton It is considered that the general manufacturing business is firmer here, and founders, engine-builders, and others are getting orders. The chemical business continues firm with an improving tendency. A considerable quantity of iron rails have been brought from Belgium to the Tyne to be put into the Newcastle tramways, the Belgians having undersold the local makers.

A general meeting of the North of England Institution of Colliery Engineers was held in Newcastle on Saturday, the president (Mr. Hair) in the chair. A committee was appointed to make arrangements for the members to visit some of the collieries in Northumberland. It was also decided that arrangements should be made for members to attend at the chain-testing establishment at Low Walker or Sunderland to witness the testing of wire-ropes and fastenings. A discussion took place with respect to a proposal for members to visit the Paris Exhibition, and it was decided that members desirous of visiting the Exhibition should communicate with the secretary, who promised to make all the necessary arrangements. The Septennial survey by the River Tyne commissioners was made on Monday. The procession of barges and steamers, in which were the commissioners and the members of the Newcastle and other corporations, on the river formed a most imposing and interesting spectacle. The work executed by this commission has resulted in the improvement of the Tyne river to an enormous extent, and the exports and imports now exceed those at any other port in the country. The depth of water has been so much increased as to permit the passage of vessels of from 2000 to 3000 tons at nearly low water. Dredging has been effectually carried out under the direction of Mr. Ure, the late engineer, and the depth of water in Shields Harbour has been increased from 17 ft. to 35 and up to 50 ft. At Newcastle Quay from 16 ft. to 38 ft., and at Scotswood from 11 ft. to 16 ft. That is four miles west of Newcastle. Many points have also been removed on the river, and other improvements effected; at present the greatest works in hand are the piers and the Cable Dean dock, and those are expected to be completed during the next seven years. The Tyne will, when these works are completed, form to a very considerable extent a harbour of refuge, as well as a first-class export and import harbour.

An Industrial and Art Exhibition was opened at Jarrow last week; the exhibits consist of models of machinery, ships' furnaces, and other inventions, pictures, &c., chemical and philosophical apparatus—including the telephone, microphone, &c. In connection with the Exhibition there are many objects of interest in the vicinity—the manufacture of iron in all its stages, iron shipbuilding, &c., at Palmer's great works, paper-making, extraction of copper, glass-making, &c.

At the Boldon Colliery, near Jarrow, the telephone has been introduced, and it is intended shortly to introduce the electric light, for the purpose of lighting the bottom of the shaft, engine-house, &c.

REPORT FROM CORNWALL.

July 15.—The most important mining event which has happened since we last wrote is undoubtedly the meeting at Wheal Owles. That any mine should make a call of 62*l.* 10s. a share really appears almost fabulous, though when it is borne in mind that this mine is divided into but 80 shares, and that the total amount of the call is but 5000*l.*, after all the prospects really do not seem so alarming as they may have been at first sight. Wheal Owles has conducted an important experiment in the most plucky manner, but hitherto its energetic purser, Captain R. Boyns, has been foiled by circumstances. Stocking paid him excellently once, but the success has not been repeated, and now the time has come when the future of this fine old mine will have seriously to be considered. Probably the number of shares will be largely increased so as to lighten the individual burden; but we cannot believe that Wheal Owles will succumb to the pressure which has so long been gallantly resisted just at the moment when a little light appears in the sky. True the mine has fallen off, but there are hopes that ere the special meeting a new lode will be cut.

Capt. Boyns has no doubt whatever that the price of tin will mend, though he very wisely declines to say when. The feature which he most dreads is the introduction of cheap labour into Queensland by the importation of Chinamen; nevertheless, the supply from Queensland is largely on the decrease, and he does not believe the sensational stories so often circulated, and so frequently contradicted, of the existence of valuable lodes in either Queensland or Tasmania. However, it must be borne in mind, as we have again and again pointed out, that the depression in tin is not exceptional, but part of a general depression which has assailed trade all over the world. Mr. Sholl, too, noted this at the meeting, but we decline to follow him in the opinion that the annexation of Cyprus and its concomitants are going to do such wonders. The settlement of the Eastern Question, if though only for time, must, it is true, tend to the improvement of business and trade generally; and if it had been settled before the war broke out we should unquestionably be in a far better position than we now are. This, however, is not the place to discuss politics, save on the broad issues that peace is favourable to commerce, and war and the arts of war opposed to it. Whatever general revival of trade there is Cornwall must share in, and for special good she must look to special causes—to the improvement of machinery and operations—the extension of mechanical rock-boring, and the facilitating of dressing processes. It is quite on the cards that Mr. Sholl may himself be a greater benefactor to mining in Cornwall than any mere politician as such.

With the remarks made at Wheal Owles by Mr. Scholl and Mr. Goffin relative to the amount of work done by the Cornish miners we cordially agree. Wages are undeniably low in Cornwall, but they are as high as the circumstances of the time and the quantity of work done justify. The men could do at least 30 per cent. more than they do now without in the least distressing themselves, and if they did it would be better for all parties concerned. The men themselves could get higher wages, and the mines be developed more rapidly, and at the same time more economically, as there would be greater results without any practical increase in the general charges. But to bring about this desirable state of things a good many old-fashioned ideas will have to be given up.

It is comforting, however, in spite of all loss and depression, to find that nobody seems to have lost heart—that faith in the future still burns as strongly, we may say, as ever; and that the remarkable way in which Cornish mining has accommodated itself to the circumstances of the time is rightly held as a matter of the most encouraging augury. Nothing but actual exhaustion of minerals will kill Cornish mining, of that we may be sure.

We are glad to see that tribute is held in such favour at Wheal Peevor. This cheap and effective system of working has been held in too little esteem of late in some quarters. At Peevor, however, there are 17 tribute pitches being worked by 50 men, who are making fair wages. This is in addition to the 14 points of tutwork operations, valued at 233*l.* per fathom.

Mr. Provis, secretary of the Mining Institute, reports black tin sold during the month of June to the extent of 856 tons 17 cwts. 1 qr. 1 lb. from various mines and tin streams, including Agar, Basset, West Basset, Basset and Grylls, Blue Hills, Botallock, Carn Brea, Combellack, South Condurrow, South Crofty, Cook's Kitchen, Dolcoath, South Frances, West Frances, West Godolphin, Wheal Grenville, Wheal Jane, Levant, Lovell, Owles, Penhalls, Penstruthal, East Pool, Tincroft, and Wheal Mary.

SHOLL'S PNEUMATIC STAMPS.

However much opinions differ with regard to the character of the tin deposits of Australia and Tasmania and their influence on the future of Cornish tin mining, all are agreed respecting the importance of machinery which shall quicken and cheapen the return of the mineral. Whilst the rock-drill is surely superseding hand-labour in mines which can afford the outlay, an unquestionable improvement on the old gravitation stamps is being eagerly looked for as the first step towards a more economical and speedier preparation for the smelter. A Cornishman by birth, he has a large experience in all the mining districts of the world, and is the patentee of the pneumatic stamps. Of late, he has greatly improved on his original invention; and, by the permission of the adventurers of Botallack, Messrs. N. Holman and Sons, Penzance and St. Just, have erected one of his machines, the first set up in Cornwall. It has been seen at work there by many of the most practical men of the county, who have expressed themselves highly satisfied with it. The stamps consists of two cast-iron standards bolted to a strong bed-plate, which is again fastened to a heavy granite foundation. The driving power of the stamper consists of a heavy shaft, running in suitable plummer blocks on the top of the standards. A heavy crank runs between the standards, carrying with it a forked connecting rod, at the ends of which a steel rod is introduced, and on it the whole of the motive power is centred. The stamping tupp and pneumatic cylinder are in one piece, the cylinder itself being pierced with a double slot through which the steel pin attached to the pneumatic piston reciprocates. At the top and bottom of the slot are the air chambers, which take off, by compression and expansion, the jar from the motive parts. The weight of the entire machine is about 7 tons. The pneumatic tupp and cylinder is about ¼ ton, and work at a minimum speed of 140 strokes per minute, strikes a blow of about 2 tons, thereby giving 280 tons per minute in the coffer. The tinstuff is introduced through a hopper in the rear of the machine, and is passed through No. 36 grates at the sides at a minimum rate of 1 ton per hour. The chief difference between this and Mr. Sholl's first pneumatic stamps is that the pneumatic cylinder is reciprocated by a forked connecting rod attached to a piston moving in a slot, instead of by a piston rod and gland, with which there is always great wear and tear when there is high velocity and constant work. Another difference is that in the new machine the velocity and weight are sufficiently increased to do about 20 times the amount of work in the same time. The power of the engine is developed in the blow, minus the friction of the belt. One of these machines is about to be sent to Australia and another to America. At Botallack the machine has been working with a 36-grate, similar to that used in the Redruth and Camborne districts, but this grate is too large for Botallack tin, which is so fine that a flashing is attached to the gravitation stamps there. When a finer grate has been fixed, a trial will take place to ascertain how many stamp-heads it is equal to. At present it is said to be equal to 24 heads. Mr. Sholl, now of Manchester, is superintending the working of the machine.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

July 18.—A better tone is observable than before the Quarterly Meetings were held. Consumers who were holding off to see how events would turn out have now entered the market, and some very fair orders for pig and finished iron are the result. Merchants at a distance have also given out some good contracts. As a rule, however, a reluctance is still manifested to buy far forward, for purchasers are wanting in confidence that the existing difference between what are termed the "crucial" prices and the rates which actually govern transactions can be maintained. Neither, on the other hand, are makers, as a rule, anxious to enter into long engagements. The quotations for high class pigs are firm, at the official prices which ruled before the meetings of last week—4*l.* for hot-blast qualities and 1*l.* more for cold-blast; but in good contracts really 3*l.* 17s. 6d. and 3*l.* 15s. is accepted for hot-blast sorts. Medium and common pigs are hardly so strong as they were. The same feature has to be reported touching finished iron other than the "marked" brands, as keen buyers will not allow makers to have the benefit of any ease in the pig market. The sheet trade is still quiet, but at one or two works more is being done at the mills which turn out this description of iron than recently. Buyers of coal report that the market is more than ever in their favour, notwithstanding that no quotable change has occurred in prices. Forge coal can be had at as low as 6s. 6d. per ton, In a few well informed circles there is something more than an idea that 9s. for Earl Dudley's furnace coal may before very long cease to be the price, and that buyers will be advantaged.

The failure of Mr. Carmi Rollason, of Wolverhampton, who was formerly engaged in the coal and iron trades on his own account, but who has been manager to Messrs. H. B. Whitehouse and Son for 40 years or so, was formally announced on Friday evening. It had been an understood thing in the district ever since the failure of Messrs. Whitehouse that the event must take place, for the fortunes of the one and the other were pretty much assimilated. The petition which Mr. Rollason has filed mentions the liabilities at 14,000*l.*, and the assets at 2000*l.* Of the total liabilities Messrs. Whitehouse are set down as creditors for over 6000*l.*, and a local bank for over 4000*l.* As to Messrs. Whitehouse's suspension, the results of the accountants' investigations are in some quarters declared to point to a dividend of somewhere about 5s. in 1*l.*

At a quarterly meeting in Wolverhampton, on Wednesday, of the committee of the Staffordshire and East Worcestershire Mining Accident Fund, it was announced that no appeal for aid had yet been received. There was no business of any importance.

In North Staffordshire the demand for coal does not improve, and stocks are accumulating at the pit banks. Prices are weak, and competition severe. Proprietors of ironstone pits, especially where the inferior qualities are mined, have considerable stores of the mineral, although their get has been curtailed. The demand for pig-iron is small. Finished iron makers are looking for new orders now that the quarterly meetings are over; stores in merchants' warehouses and in consumers' hands are known to be very low, and it is hoped that a course of replenishment may be early adopted.

Mr. James Watson, of Warley Hall, has joined the board of directors of the Patent Shaft and Axle Company.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

July 17.—The Ruabon Coal Company assign as the reason for liquidation the high price of labour and the low price of coal. Their recent output has been 1000 tons a week, which is far below the capabilities of the plant. The case of the Ruabon Clay Company against Charles Powis was heard in the Oswestry County Court on Saturday. The defendant is an auctioneer, who recently sold the plant at the Ifton Rhyn Collieries on behalf of the mortgagee, and the plaintiffs sued him for 20*l.*, the value of a flat wire-rope belonging to a 20-horse power Robey semi portable engine, they bought at the sale, and which the defendant had retained. The defendant objected to the whole proceedings as informal and wrong; but the judge overruled his objection, and a compromise was ultimately effected, the plaintiffs paying 11*l.*, the defendant giving up the rope, and each party paying its own costs. The water is now, after ten weeks' winding, out of the shallow pits of this colliery, and the work of repairing the workings and refixing the pumps has commenced.

The flow of benevolence to the distressed colliers has been somewhat checked by the refusal of seven men to work at Bryn Melly Colliery. On enquiry it appears that they were not men who had been relieved, and it would, therefore, be a pity if the really deserving should suffer for their conduct.

The brick, tile, and drain-pipe trades flourish amid the general depression. The Penybont Works, belonging to Mr. J. C. Edwards, near Ruabon, have been enlarged; but the production is scarcely yet equal to the orders. The other works of the district are also busy.

A poor fellow who, during the late strike at Pantdreinlog Slate Quarries, had gone by a chain down a sink to fetch his tools, was found on the resumption of work at the bottom, in such a bruised and exhausted state that he has since died. He had fallen down in a fit.

From the report of Mr. T. F. Evans, H.M. Inspector of Mines, it is pleasant to learn that the number of accidents from falls of roof were less during the last year. The number of summonses he was compelled to take out against owners, lessees, and others were very few, and the convictions still fewer.

From the Ruabon Accident Hospital report recently issued it appears that twelve patients were admitted last year, of whom seven were discharged cured; two died soon after their admission, and three were under treatment at the end of the year. The patients were by trade colliers, brickmakers, and labourers. The accounts show a balance in hand of 183*l.* 5s. 10½d.

I noticed in a former report the establishment by Messrs. Barnes, father and son, who are colliery and slate quarry owners in North Wales, of a British Workman Public-house, near Chirk. The house has been well used during the year, with its reading and lecture rooms. At its anniversary, held on Thursday, Mr. Barnes, jun., was presented with his portrait by the workmen and others frequenting the house, as an expression of their appreciation of the efforts of himself and Mrs. Barnes for their benefit.

A new discovery of ore is reported from the Old Talargoch Lead Mine, in the 330 yard level east, and it is hoped that this will be the precursor of a return to the former successful working of the mine.

The Mineral Corporation of Great Britain begins its work by operations at the Hafna Mine, near Llanrwst. One of its professed objects is a laudable one, especially in the district where it com-

mences work—the amalgamation of small concerns under one management. I wish it success worthy of its name.

Little can be said of the lead mines of the Principality, except that they are working as usual, with much the same results.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

July 18.—Notwithstanding the depressed state of commerce, the directors of the Swansea Bank announce an interim dividend for the half-year ending June 30 at the rate of 7½ per cent. The first sod of the new railway extension to Cardigan is expected to be cut in the course of a few days. Hitherto the town and port of Cardigan have been without railway communication. The first sod of the Pontypridd, Caerphilly, and Newport Railway will, it is expected, be raised on Aug. 7, and the new graving dock at the Alexandra (Newport) Dock on the previous day.

An heroic act has been performed by a mechanic named William Johns, working at the Protheroe's Trust Collieries. A trial pit is being sunk near Maesycwmmer, and a diver from Newport was trying to adjust the bucket in his diving dress (the pit being filled with water), when the rope supporting his body slipped up, leaving him in a very perilous position, from which he was rescued by Johns. A few years ago the same man risked his life in saving some persons imprisoned in a dip heading at Pengam.

A new industry has of late sprung up in the district. At Pencoed, near Bridgend, are terra cotta, &c., works, belonging to Mr. J. Williams. It is said the work turned out is equal to any of the kind in the kingdom. The works are exceptionally situated, so far as clay and sand are concerned.

The Iron Trade remains in a comparatively unaltered condition, still the fact is apparent that there is more work in hand than was the case some three or four months ago. The clearances during the week have been more than the average, being mainly to South Australia (Adelaide), Vera Cruz, Gothenburg, and Cronstadt. Large quantities of iron ore continue to arrive daily at Newport, and this cannot but be taken as a hopeful sign. Railway iron is, perhaps, in a little better request, but prices are exceptionally low even in these bad times. As for bars, the continental is almost *nil*. For pig-iron prices have been rather more in favour of buyers. The steel works are moderately well employed, principally on orders for rails, which, however, are disposed of at very low prices.

The Monmouthshire tin-plate works are badly off for orders, but those in the Swansea district are, in many instances, going full time. The Vernon Tinworks are still idle, owing to a trade dispute. There is a rumour that a works near Newport, some months closed, will be re started.

The coal trade is in about its usual condition. The output continues large, and more than equal to the demand, Shipments, taken on the average, are fairly maintained. The demand for steam qualities is fairly good, but prices are the same as ever. House coals are dull, but a little more is apparently doing. The patent fuel department is very dull.

During last month Cardiff cleared 5634 tons of iron, compared with 16,047 tons in the same month of 1877; Neport, 10,901, against 17,468 tons; Swansea, 556, against 252 tons. The principal clearances were to Bombay (2450 tons), Aarhaus, Sulina, Gothenburg, Poti, and Santander—all of rails. The coal shipments foreign were during the same periods—Cardiff, 345,993, against 363,257 tons; Newport, 64,562, against 59,164 tons; Swansea, 53,572, against 59,867 tons; and Llanelly, 5901, against 4640 tons. Coastwise shipments:—Cardiff, 65,487, against 72,033 tons; Newport, 71,600, against 71,515 tons; Swansea, 18,881, against 23,211 tons; and Llanelly, 11,588, against 11,268 tons. Patent fuel:—Cardiff, 3799, against 10,276 tons; and Swansea, 8194, against 11,344 tons.

It is reported that the Garth Steel, Iron, and Tin-Plate Works, Newport, are to be re-started, an arrangement having been arrived at between the creditors and the mortgagees for the working out of the stock.

The starting of the Abersychan Ironworks is eagerly talked of. The new manager appointed is said to be Mr. Windsor Richards, well and favourably known in South Wales and Monmouthshire.

Twelve months ago the sinking of the Lady Margaret Pit was commenced in a field close to the Treherbert Station. This pit is the property of Lord Bute, and is sunk to work a large acreage of coal hitherto untouched lying between the present Bute Merthyr Colliery and the Tyla Coch Company's property. In the early part of the sinking operations a strong spring of water was tapped, in consequence of which a large lodge room had to be constructed, which occupied three months in driving. Ultimately this water was walled in, and the sinking operations proceeded quickly and satisfactorily until last Thursday when the 2 feet mine seam was struck. The seam is one piece of coal 3 feet 3 inches in thickness, and of splendid quality. It is confidently expected that the 4 feet and 6 feet seams will be struck in two months. The pit is 15 ft. in diameter. It is to be fitted up with a splendid pair of 30-in. engine, manufactured by Fowler and Co., Leeds. The engineer is Mr. W. T. Lewis, Bute Mineral Estate Office. The works have been carried on under the superintendence of Mr. T. Curnew, the contractor being Mr. M. Llewellyn. The coal winning at Lady Margaret Pit has revived hopes for the early re-starting of the Bute Merthyr Colliery.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

July 18.—A steady business continues to be done at the lead mines working in the Matlock and other districts, but those raising any quantity of ore worth speaking of are but few. A good deal of what is known as calk is converted into barytes at two or three places in the Matlock district and they have been doing a rather brisk trade in colour making, and one of these, most picturesquely situated at Via Gellia, near Cromford, is now in the market, affording an opportunity to anyone desirous of living in a most charming country, and doing business at the same time. On the Erewash Valley line of the Midland the collieries and works have been going on much as usual, but the workmen in most instances have been on short time. In the Chesterfield district the pits have been working three or four days a week, and some even less, so the position of the miners is now fully as bad as it has been at any period during the last seven or eight years, and just now there does not seem any likelihood of a change for the better taking place.

Coal has also come down so low that colliery owners do not look for profits so much as being able to clear expenses. The demand for house and other coal for the London market has fallen off considerably, and no improvement is looked forward to in that direction for the next couple of months, as consumers cannot be induced to put down stocks during the summer months when the prices are so very low. Steam coal does not sell so readily as is usually the case in July, whilst the exports for shipment are very moderate. At the Boythorpe Colliery, near Chesterfield, the men have agreed to a reduction of 3d. per ton for three months, to enable the owners to complete their contracts, the latter giving an assurance that after that time the old rate of payment would be returned to, and that instead of working only two days a week, as they had been doing, an effort would be made to secure them four days. In this case the men have acted wisely, showing that they are not insensible to the present state of trade, or the difficulties their employers have to contend with. Derbyshire pig-iron has gone off rather better of late, but, as might be expected, without much change in the price. In manufactured iron there has been no material alteration during the week, and whilst rolled iron has not been so much enquired for the foundries have been working tolerably well in pipes and general castings. At Dronfield the forge and malleable casting works of the Messrs. Lucas have been doing a steady trade, whilst there has been no falling off in the production of Bessemer rails at the extensive establishment of Messrs. Wilson and Cammell at the same place.

At several of the works in Sheffield there has been a change for the better, leading to an increase in the number of hands employed and to full time as well. At the Atlas Works of Sir J. Brown and Co. (Limited) orders have been received for armour-plates to such an extent that some 50 or 60 extra hands have been set on, and are likely to be busy for some time. Ship and boiler plates have also been in better request, and there appears to be more doing in cutlery, orders having come to hand rather freely of late. Bessemer rails are as brisk as ever, and Russia has taken largely of them; and so cheering are the prospects of this branch that one of the leading firms is now putting down a new train, so as to double the present power of production. The engine and machine works are still very quiet, but file makers are rather better off. For fancy stove-grates the demand has been well maintained, so that the foundries in the town and district have been working very well. In the Leeds district one or two of the locomotive establishments are very fairly off for business, but the tool makers are still but partially employed. Two or three more furnaces have been put in blast, which looks well for the future, whilst bar and angle iron has slightly improved in demand.

In South Yorkshire the Coal Trade has in no way improved, and whilst many of colliers are still on half time their employers are working at a loss. Good house coal can be bought at 6s. per ton, whilst Silkstones are as low as 7s. or 7s. 6d. per ton. The business doing with London has decreased very much during the past two months, which in a great measure is attributed to the rate charged by the Great Northern, and which the company has declined to reduce. Our exports of steam coal from Grimsby to the North of Europe have been less than for the corresponding period of last year, notwithstanding the low prices that prevail.

A good deal of discontent still prevails in the Barnsley district amongst the miners, and last week a number of the men working in one part of the Woolley left after receiving 14 days' notice of a reduction, as they would not submit to it. This week all the remaining hands, sympathising with those left, sent in their notices, so as to join their comrades.

At Manvers Main the Coalowners Association has been requested on the part of the workmen to endeavour to settle the dispute between them and the company. The Vice-Chairman has replied that the Association could not entertain the application, as the members were of opinion that the men were in the wrong.

REPORT FROM THE FOREST OF DEAN.

July 18.—Some profess that a slight improvement has taken place in the coal trade; but, in conversing with the actual traders and proprietors, we are unable to arrive at that conclusion, notwithstanding that that reported improvement appears in print this day in the district. We regret in being compelled to believe that trade is exceedingly bad, and that the labouring classes only obtain very limited employment, so that the "pinch" of poverty continues to be experienced in a most unpleasant manner. Some of the less favoured works only furnish from two to four "turns" in a fortnight, which, of course, means half starvation at home among the workers. It has been a great oversight among the Forest proprietors in not introducing manufactories into the district to consume their own coal, and in that way promote their own interests and employment for their workpeople. Mr. Chivers is setting a good example in this respect, which may fairly be expected to influence others for good in the same direction. His coal is declared to be admirably adapted for such purposes. Little or no improvement has occurred in the iron trade, but the Messrs. Crawshay intend going on during the current quarter without reducing the number of furnaces in blast. Slackness in employment characterises the iron mines as well as the collieries, though, perhaps, not to an equal extent. This week a 10 per cent reduction in wages has been announced at the Forest Vale Ironworks, which the men are told must be submitted to or leave the works, some of the men being dealt with exceptionally severe, with a view, it is said, of weeding them out; the roller, for instance, being reduced 50 per cent., or the option of leaving. In the midst of trials and discouragements at home in the Forest, some are wisely turning their attention to the British colonies, and are seeking the aid of the colonial officers for emigration for free or assisted passages, mostly to Queensland and New Zealand. But some are so reduced that they cannot even pay for their ship-kits. Under these circumstances, it is gratifying to be able to report that the Dean Forest Relief Committee is seeking subscriptions from the public to assist deserving cases, and has already made a number of grants to such. In this way much good may be done; helping some to emigrate will ease the home labour market, and at the same time benefit the colonies. Prices remain in *statu quo*.

Original Correspondence.

RICHMOND MINING COMPANY.

SIR,—If the rider of a losing horse was reproached by the owner on the ground that, having to carry ½ ton, it was disgraceful to be beaten by an animal that was only weighted with his saddle, it would be not one whit more absurd than the argument used by Mr. J. Bayliss in his last letter, that "15 per cent. would only repay the Richmond capital once, whereas the Eureka Company have repaid heirs 25 times." Mr. Bayliss calls the comparison between the Eureka Company and the Richmond a "crucial test." This might be so if the attendant conditions were identical, which most assuredly is not the fact.

The Eurka commenced a year earlier, with a series of mines so much more extensive than the then humble Richmond that any comparison between them was out of the question. The Eureka got their property for a small sum, struck splendid ore at once, and, according to Mr. Keyes, the then manager, netted 60,000*l.* the first year, up to June, 1871. The effect of this success was to enhance the value of the adjoining location, and to give some colour for the 200,000*l.* obtained by the vendors of the Richmond. The large capital thus absorbed in the purchase was a perpetual drag; the 20,000*l.* left as working capital was all sunk in the preliminary expenses and works, and the directors speedily found themselves in the cruel position of having to handle the property without a shilling of working capital. The mine, however, opened out well, and 33,000*l.* was obtained on loan at 11 per cent., thus adding another weight to carry.

Within six months of starting our amiable neighbour, the Eureka, commenced an attack on us by armed men and feed lawyers, forcing us to keep 12 men with rifles to retain possession of the mine, and an army of lawyers and experts to defend our legal rights. That suit was based on the opposite principle to that taken up by our opponents in their late attack. That suit cost us about 25,000*l.* in law costs and attendant expenses, prevented our working for some six months, and the compromise settlement gave the Eureka 17,000*l.* of our money for their little lookout location which they bought for 1000*l.*, and to which they had no legal mining claim, as their patent was obtained by a gross misrepresentation, and the ore under it on the principle set up by Judge Field's late dictum was unmistakeably the property of the Richmond. Clarence King, the fellow countrymen of the Eureka directors, thus describes their action—"The tactics of our opponents have been to cripple and stab us at every vulnerable point, relying more in my belief in crowding us into defeat or compromise by savage onslaught than by any valid legal right, or any desire for justice." The last attack was one far more iniquitous in its nature, and greatly more costly in its results. It took 15,000*l.* from our profits for law costs, and deprived us of ore, the net profit on which has amounted to some 200,000*l.*, and which, if justice is to be had in America, must be taken from the Eureka Company and added to the results of the Richmond explorations.

Mining rights are often provisional and conditional. For instance, the claim to a lode may be perfectly valid till some adjoining owner by working fairly on from a superior vein of higher origin, or older date of location, establishes a legal right to displace the former owner. What the Eureka did was to drive a tunnel night and day surreptitiously through our ground, without an atom of justification, to get under our Potts' Chamber, where they found the rich body of ore. I publicly stated the indications demonstrated would be found to exist, and from this vantage ground subsequently traced a small stringer of ore back to their old workings, thus gaining the only pretence for disputing our right to the whole lode, which we in a few weeks more should have obtained as our own indisputably. If there is any principle involved in the decree that "Cursed is he that disturbeth his neighbour's landmark," this conduct of the Eureka Company was glaringly criminal.

The committee in their bitter determination to run down the board and strike down Mr. Probert, give all their sympathy to the company which has done its utmost to harrass, impede, and rob us, and praise the management which owes its apparently greater success to the employment of such nefarious means in order to make out a case against the board of the Richmond, who, in spite of the most adverse circumstances, and against difficulties and trials that would need a volume to indicate, have achieved the first great success of any English company in America—a success that is absolutely unparalleled in the history of mining—a success which in its present results, taking what the shareholders have received, with the present price of their stock, represents 18*l.* 10*s.* for each 5*l.* share—a success achieved in about six years of working.

The highest authorities in America have borne united testimony to the judgment and skill with which the Richmond Mine has been laid out and explored. Although the Eureka Company have had 18 months more time to work in they only raised ore up to August, 1877, to the value of 1,625,228*l.*, as against 1,793,108*l.* obtained by the Richmond. Mr. Bayliss seems to think it clinches his argument against the Richmond management to adduce the fact that it only spent one-tenth of the money in explorations to that expended by the Eureka. Certainly if to expend ten times as much to attain a less result be a merit the Eureka directors have earned it; in my innocence I thought it was a striking testimony to the superior judgment and enterprise of the Richmond board. As a bold fact it may be admitted that both companies have been working on ore of similar characteristics under like conditions, but that very fact imposes the necessity of stating all the facts at the precise time, when the comparisons between the results is taken.

In its own history the Richmond affords instances of extraordinary vicissitudes and changes in costs and profit, when ferruginous ores predominate, it takes 9 tons to make a ton of bullion, as against 5 tons when carbonates are plentiful, all the costs being much greater in proportion when treating the poor ores to those incurred when dealing with the rich. Our smelting costs have thus varied from 4*l.* to 2*l.* 8*s.*, the latter being the present cost the gross yield per ton of ore smelted has varied from 8*l.* to 15*l.*, the last being the present average; the profit per ton of ore smelted has changed from 1*l.* 5*s.* to 4*l.* 10*s.*, the last being the present rate.

The Eureka have had similar experience, but not as a rule coincident with ours, and thus an opportunity is afforded to any ingenious detractor to pick out periods when our profits were lowest and costs highest to compare with Eureka workings when they were running their fattest ore, and reaping the highest returns on the lowest outlay. The only fair test is to have ore of the same assay value, and chemically similar, tried by each company at the same time. The Richmond Company were the first to commence improvements in furnace construction and management; they were the first to adopt collecting flues, by which such great savings have been effected.

It has been my fate to have objections started by our successive managers to suggestions which if adopted at the time would have placed us still more in advance of our neighbours in enterprise and successful results. Six years ago I urged in vain the constructing of a railway between the mine and works; in 1845 I requested that a diamond drill should be obtained, and borings made wherever ore indications existed, to obtain reliable information as to direction of explorations. On Mr. Rickard's arrival at Eureka I sent him the advice to employ air-compressors, which he declined to adopt, and within these few weeks sends home a proposal to employ them as suggestions of his own. If the profit obtained by the Eureka from working in the contested ground now subject to appeal be taken, as it must ultimately be, from their earnings the balance of net profits is greatly in favour of the Richmond if, as in justice it ought to be, the profits made from ore unjustly taken from us be added to our earnings, the result would be still more triumphantly in favour of the Richmond.

Mr. Bayliss takes for comparison two years of Richmond working ending August, 1877, which were the worst ever experienced in the quality of the ore dealt with, and the profit was consequently at its very lowest; it is very possible that the low grade refractory ore then being dealt with might have cost 30*s.* per ton more for fuel than the Eureka Company were at the same period expending on the better class of ore, but to assume that this implied a preventible loss to the Richmond shareholders of "103,000*l.*" is so obviously absurd and unfair as to need no refutation. The motives which led to the refinery being started were based on the then existing charges. Our first manager—Mr Fisher—who was a professor of chemistry thus wrote to the board on Jan. 7, 1877—"I have determined that the best interest of the company require some other method of realising upon the crude bullion, and am of the opinion that the time has now come to refine at our own furnace. The actual net returns upon the bullion produced during September and October was but 75·93 per cent. of the assay value. Mr. Meyer writes, under date of Jan. 19 that we need not now calculate upon more than 73*s.* to 74*s.* for the future. Selby, who buys our bullion, holds it for 30 days at his works before making a return, knocks off 5 ozs. silver for his own benefit, and finds so much dross, that he is now realising altogether too much profit from our bullion. If my anticipations are realised by refining ourselves, the net returns will be at least 35 per cent. of the assay value of the bullion."

Mr. Clarence King, at a later date, gave similar advice, and it was not till 1874 that Mr. Probert induced the board to carry out these suggestions. At the time of Selby's death but for the refinery all our bullion would have been in his hands, and have remained locked up for nearly a year, which, in our then state, would have been even more ruinous to us than it proved to be to our neighbours. The refinery thus saved the mine for the shareholders, and it is doubtless due to its existence that smelting firms now offer to accept half their former exorbitant charges.

July 19. JOHN ELLIOTT.

[For remainder of Original Correspondence see this day's Supplement.]

Registration of New Companies.

The following joint-stock companies have been duly registered:—

EAST PANT DU LEAD MINING COMPANY (Limited).—Capital 40,000*l.*, in shares of 2*l.* 10*s.* each. To carry into effect an agreement made between H. Bragg and William Roberts of the one part, and R. M. Roberts on behalf of the company, for the acquisition of the East Pant Du sett. The subscribers (who take one share each) are Henry Bragg, Cefn Mawr, near Mold, gentleman; W. Roberts, Glanallin, near Mold, mine captain; John Roberts, Penyfordd, Mold, agent; F. Bullen, Chester, dental surgeon; F. T. Farrimond, Chester, timber merchant; J. P. Cartwright, Chester, solicitor; J. E. Edwards, Chester; R. M. Roberts, Chester, cashier; and J. W. Clapp, Chester, accountant. The subscribers will act as directors until the formal appointment of the board.

BELGRAVE AND BLACK MOUNTAIN AMALGAMATED LEAD MINING COMPANY (Limited).—Capital 40,000*l.*, in shares of 2*l.* 10*s.* each. To carry out an agreement made between H. Bragg, William Roberts, and N. Martindale of the one part, and R. M. Roberts on behalf of the company, for the acquisition of the Black Mountain sett and the Belgrave Mine. The subscribers are nearly the same as in the case of the previous company—H. Bragg, William Roberts, John Roberts, N. Martindale (Meadow Bank, Blackheath), F. Bullen, F. T. Farrimond, J. P. Cartwright, R. M. Roberts, and John Clapp.

GRAND DUCHESS SILVER-LEAD AND BARYTES MINING COMPANY (Limited).—Capital 12,600*l.*, in shares of 1*l.* 1*s.* each. To acquire lead mines and land in the parishes of Llangwnior and Abergwili, Carmarthen. The subscribers are—D. Edwards, Carmarthen, merchant, 10; J. Bonville, Carmarthen, merchant, 10; D. Prosser, Carmarthen, 5; M. Smith, Hexham, draper, 150; J. Davis, Bowstreet, Cardiganshire, mining engineer, 5; J. Meredith, Aberystwith, accountant, 5. The directors are not yet appointed.

BANGOR CORNISH SLATE COMPANY (Limited).—Capital 10,000*l.* in 100*l.* shares. To acquire and work the Bangor Cornish Slate Quarry, Cornwall. The subscribers are—G. R. Denison, St. Leonard's place, York, no occupation, 15; J. C. Tell, 23, Rood-lane, engineer, 4; S. P. Wilding, 23, Rood-lane, accountant; R. Green, Ladbroke-terrace, builder, 6; C. T. Hawke, Bennett Dawshouse, Cornwall, engineer, 6; R. P. Green, 8, Ladbroke-terrace, W., diamond merchant, 2; John Bennett, Saltash, engineer, 6. The directors are—Messrs. J. Bennett, G. R. Denison, and J. C. Tell.

STURGES' WAREHOUSING COMPANY (Limited).—Capital 20,000*l.*, in 50*l.* shares. To acquire the business of wholesale warehousemen, carried on at Gloucester, under the style of Joseph and Charles Sturge. The subscribers (who take one share each) are—Charles Sturge, Brown-street, Birmingham; C. D. Sturge, Birmingham; W. Sturge, Brown-street, Birmingham; S. Keep, Brown street, Birmingham; J. L. Ellis, Leicester; R. Dudley, Birmingham; Thomas Scott, Birmingham.

NICHTHEROY TRAMWAY COMPANY (Limited).—Capital 65,000*l.*, in 10*l.* shares. To construct and maintain a tramway in the province of Rio de Janeiro, Brazil. The subscribers (who take one share each) are—R. Aspinall, The Hut, Surbiton; C. Carnie, 6, Starling Hall Villas; G. Bushell, 45, Manchester-street, Manchester-square; E. Henshaw, 22, Mincing-lane; H. Nathan, 22, Mincing-lane; George Chandler, Coleman-street; A. L. Pearse, 24, Cressington-road, Lewisham

THE SHEFFIELD COAL COMPANY (LIMITED) DESIRE to ENGAGE the SERVICES of a THOROUGHLY HIGH CLASS and PRACTICAL MANAGER for their BIRLEY SILKSTONE COLLIERIES, near SHEFFIELD.

Application to be made either to Mr. T. W. JEFFCOCK, Bank-street, Sheffield; or to the Managing Director of the company, Mr. T. R. GAINSFORD, at the company's offices, South-street, Sheffield.

OFFER WANTED FOR 25-HORSE POWER HORIZONTAL HIGH-PRESSURE ENGINE, complete, and in good working order.

Apply, "Secretary," Gosport Waterworks Company.

THE RICHMOND CONSOLIDATED MINING COMPANY (LIMITED).

Capital, 54,000 Shares of £5 each.

FIFTEENTH DIVIDEND.

Notice is hereby given, that the Directors of this company have DECLARED a DIVIDEND of ONE POUND PER SHARE (free of income tax), PAYABLE on and after the 20th of July instant, at the company's bankers, the Union Bank of London, Princes-street, E.C. And notice is hereby further given, that the Transfer-books of the company will be closed on the 17th, 18th, and 19th July instant.

By order of the Board,

HUBERT AKERS, Secretary (pro tem.)

44, Coleman-street, London, E.C., 15th July, 1878.

THE RICHMOND CONSOLIDATED MINING COMPANY (LIMITED).

Notice is hereby given, that the ORDINARY GENERAL MEETING of the Shareholders of the Richmond Consolidated Mining Company (Limited), held on Tuesday, the 2nd day of July instant, was then ADJOURNED to TUESDAY, the 23rd day of July instant, when such adjourned meeting will be HELD at the City Terminus Hotel, Cannon street, London, at One o'clock in the afternoon.

The business of such meeting will consist only of the business left unfinished at the meeting at which the before mentioned adjournment took place.

By order of the Board,

HUBERT AKERS, Secretary (pro tem.)

44, Coleman-street, London, E.C., July 17, 1878.

CESENA SULPHUR COMPANY (LIMITED).

Notice is hereby given, that the ANNUAL GENERAL MEETING of shareholders will be HELD at the office of the company, 4, Finsbury Circus, London, E.C., on FRIDAY, the 26th day of July inst., at half past Two o'clock, to consider the report and balance-sheet, to elect directors and auditors, and for the transaction of the general business of the company. Holders of share warrants to bearer wishing to attend the meeting must deposit the warrants at the company's office in London three clear days prior to the meeting, in accordance with the Articles of Association.

By order of the Board, R. LARCHIN, Secretary.

London, 4, Finsbury Circus, E.C., July 18, 1878.

THE COLORADO UNITED MINING COMPANY (LIMITED).

NINTH ORDINARY GENERAL MEETING.

Notice is hereby given, that an ORDINARY GENERAL MEETING of the members of the company will be HELD at the Cannon street Hotel, on THURSDAY, 1st August, at Eleven A.M., to receive and consider the report of the directors, and the accounts for the year ended 31st March last; to elect two directors, vice C. F. Montresor and W. A. Harris, who retire from the direction, but offer themselves for re-election; and to elect auditors for the next twelve months.

By order of the Board, F. ANDREWS, Secretary,

21, Great Winchester street, E.C., London, 19th July, 1878.

SOLUTION OF THE PROBLEM CONCERNING THE PREVENTION OF FIRE DAMP EXPLOSIONS.

By reason of the studies made during many years in Coal Mines with inflammable air, the Undersigned has SUCCEEDED in DISCOVERING a REMEDY "TO THOROUGHLY PREVENT FIRE DAMP EXPLOSIONS," let the evolution of gas in the mines be ever so great.

For particulars apply, prepaid, to the inventor, FRANZ WODICZSKA, Authorised Mining Engineer, 15, Villefortgasse, Graz, Styria (Austria).

GEOLOGY AND PALÆONTOLOGY.—SIX ELEMENTARY LECTURES, adapted to a Juvenile Audience, will be given by PROF. TENNANT, at his residence, 149, STRAND, W.C., in the Midsummer holidays, July 29, 30, 31, Aug. 1, 2, 3, at Ten A.M. and Three P.M. Terms, Half-a-guinea for the course. Prof. Tennant will on the following week give Six Elementary Lectures on Mineralogy.

Now ready, price One Shilling.

SPECULATION ON THE STOCK EXCHANGE: AN EXPLANATION OF THE VARIOUS METHODS OF OPERATING IN STOCKS AND SHARES.

London: EFFINGHAM WILSON, Royal Exchange.

THE NORTH WALES CARRIAGE AND WAGON COMPANY

(LIMITED).

Share Capital £150,000, in 15,000 Shares of £10 each.

Deposit on application £1 per share, and upon allotment £2 per share.

Further calls will be made as the capital is required.

No dividend will be paid on the 2000 vendors' shares for the first five years, unless a dividend of 10 per cent. has been paid on the ordinary shares, after which date all the shares will rank *pari passu*.

DIRECTORS.

JAMES H. BALMAIN, Esq., Moseley-road, Birmingham.
GEORGE J. EVESON, Esq., Coalowner, Burlington Chambers, Birmingham.
ROBERT MELDRUM, Esq. (Meldrum and Oatts), 196, St. Vincent-street, Glasgow.
A. S. OWENS, Esq., 3, Newman's-court, Cornhill, London, E.C.
OTTO VOGT, Esq., Merchant, 103, Fenchurch-street, London, E.C.
(With power to add)

BANKERS—The LONDON AND WESTMINSTER BANK, Lothbury, London.

The NORTH AND SOUTH WALES BANK, Mold.

SECRETARY—EDWARD SCHUBERT, Esq.

OFFICES—32, ST. SWITHIN'S LANE, LONDON, E.C.

WORKS—PADESWOOD, NEAR MOLD.

ABRIDGED PROSPECTUS.

This company is formed for the purpose of acquiring and extending the well-known North Wales Carriage and Wagon Works, substantially erected on three acres of land, held under lease for an unexpired term of 27 years, at the very low rental of £75 per annum, and are situate in a most eligible position in the centre of the North Wales coal field, on the London and North-Western system, at Padeswood, near Mold, and are only five miles distant from the port of Connah's Quay, and ten miles from Chester.

The works, from which there is communication to all parts of the United Kingdom, are of the newest construction, and have been built on the most scientific principles to reduce labour to a minimum. They comprise smiths' shops, forge, fitting shops, wagon shops, sheds, lathes for wheel and axle turning, bolt and nut machines, steam hammers, boring and drilling machines, punching and shearing machines, steam engines and boilers, &c., as per list, with suitable offices and stores, and railway sidings throughout the works, and are capable of turning out 40 wagons per week. There are also ten repair depôts, situated at principal traffic centres for repairing wagons, and which the company intend further to extend, as the profits on repairs are very large.

The company will have the advantage of all contracts on hand, and of taking over a going concern which is well represented in all parts of the United Kingdom, and with an established business and valuable connection.

The works are capable of turning out 40 wagons per week, but for the sake of estimating profits an output of 20 wagons per week only is relied on, which will yield a profit of about £5000 per annum, and in addition thereto, by financing their own wagons, as the company intend to do, a further profit of 8 per cent. will be made, with full security on the wagons.

The dividends paid by a list of wagon companies mentioned in prospectus have ranged from 9 to 20 per cent., and it is confidently anticipated that dividends of from 12 to 15 per cent. will be realised by the operations of this company.

The company will be in a position to begin at once to earn dividends, which it is anticipated will increase from year to year as their rolling stock becomes larger.

The only contracts are dated the 10th day of July, 1878, between James H. Balmain and Edward Schubert; and the 27th day of May, 1878, between J. H. Balmain and Thomas William Martin.

Prospectuses and Forms of Application may be had of the Bankers or Secretary.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862 and 1867, and of the WHEAL SPARNON MINING COMPANY.—Notice is hereby given, that a PETITION for the WINDING-UP of the above-named company by the Court was, on the 13th day of July instant, presented to the Vice-Warden of the Stannaries by Edward Shippard Carus Wilson, Edward William Brydges Willyams, Arthur Champion Phillips Willyams, and Arthur Pate Nix (carrying on business in copartnership at Truro and Camborne, within the said Stannaries, as Bankers, under the style or firm of Willyams, Willyams, and Co.), claiming to be creditors of the said company, and that the said petition is directed to be heard before the Vice-Warden, at the Prince's Hall, in Truro, within the said Stannaries, on Friday, the 9th day of August next, at Twelve o'clock at noon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioners, or their solicitor, of his intention to do so, such notice to be forthwith forwarded to P. P. SMITH, Esq., Secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same from the petitioners, or their solicitor, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 6th day of August next; and notice thereof must at the same time be given to the petitioners or their solicitor.

J. G. CHILCOTT, Truro
Dated Truro, July 16, 1878. (Solicitor of the said Petitioners).

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the NEW ROSEWARNE MINING COMPANY.—ALL CREDITORS or CLAIMANTS of the ABOVE NAMED COMPANY, who have not received notice from the Official Liquidator thereof that their claims have been already admitted, are hereby required to COME IN and PROVE THEIR SEVERAL DEBTS OR CLAIMS at the Registrar's Office, Truro, on Wednesday, the 31st day of July instant, at Eleven o'clock in the forenoon, or, in default thereof, they will be EXCLUDED FROM THE BENEFIT OF ANY DISTRIBUTION made before such proof. And for the purpose of such proof they are to attend in person, or by their solicitors or competent agents, at the time and place above mentioned.

FREDERICK MARSHALL, Registrar.
Dated Registrar's Office, Truro, July 15th, 1878.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the AMBROSE LAKE TIN AND COPPER MINING COMPANY (LIMITED).—TO BE SOLD, under the direction of the Registrar of the said Court, on Wednesday, the 31st day of July instant, at Eleven o'clock in the forenoon, at the Ambrose Lake Mine, in the parish of St. Neot, near Liskeard, within the said Stannaries, in lots (subject to such conditions as shall be then and there stated), the WHOLE of the

MINING PLANT, MACHINERY, MATERIALS, AND EFFECTS

belonging to the said company, and being within and upon the said mine, and comprising—

ONE 40 in. cylinder PUMPING ENGINE, 10 ft. stroke, ONE BOILER, 10 tons, with economiser.

One 8 head iron stamps axle, with heads, lifters, guides, &c.; a quantity of pitwork, 4, 5, 6, 8, and 9 in.; 9 and 5 in. wood rods, 1 and 1¼ in. bucket rods, rods, plates, and bolts, bucket prongs and clacks, 2 horse whims, shaft tackles and shieves, wire rope, chains, flat rods with stands and shieves, tramroad iron and wagon, large shieves, whim and winze kibbles, ladders, launders, iron work of bob, &c.; oak axle with centre piece, old waterwheel, several wood sheds, triangle and chain, staples and glands, rolled plates, a large quantity of timber in batteus, planks, balk, &c.; air machine and pipes, miners' tools, wheel and hand barrows, lifting jack, carpenter's screw stock, bruising iron, vice bench, grindstone, 6 sieves, chests, shovels, large beam and scales, iron weights, bell, set of double and treble blocks, petroleum and other barrels, 4 wheel dog cart, 4 wheel wagon, 1 horse cart, and a quantity of other materials and effects in general use in mines.

To inspect the above, apply to the Bailiff in charge at the mine; and for further particulars to the Official Liquidator of the said company, at the Stannaries Court Office, Truro. HODGE, HOCKIN, AND MARRACK, Truro
(Solicitors for the Official Liquidator).

Dated Stannaries Court Office, Truro, July 18th, 1878.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the ALVIGGAN AND BURNGULLOW TIN MINING COMPANY (LIMITED).—TENDERS will be RECEIVED by the Official Liquidator of the said company, to be addressed to him, at the Stannaries Court Office, in Truro, until the 27th day of July instant, stating the HIGHEST PRICE which will be given for the INTEREST of the said company in both or either of the SETTS under which its mining operations have been carried on, at the Alviggan and Burngullow Mines, in the parishes of St. Stephens in Branwell and St. Mewan, within the said Stannaries, and also for the WHOLE or any portion of the

MINING PLANT, MACHINERY, MATERIALS, AND EFFECTS

Belonging to the said company, and comprising—

At and within the said MINES—ONE 32 in. cylinder ROTARY ENGINE, with 20 ft. fly wheel, ONE 10 ton BOILER, pumps, balance bob, flat rods, windlasses, pulley blocks, chains, circular forge, rotary hand pump, a large quantity of new and other timber, and a great variety of materials, stores, and effects in general use in mines, also several tons of good tinstuff.

And at the Burngullow Station of the Cornwall Railway—18 14-in. pumps, windbore, H piece and triangle.

And at East Phœnix Mine, in the parish of Linkinhorne—Two stamps axles and 24 heads, &c.

The setts and machinery, &c., thereon may be inspected on application to the Bailiff in charge at the Mines; and as to the other materials and for further particulars apply to the Official Liquidator of the said company, at the Stannaries Court Office, in Truro. R. M. PAUL, Truro,

Dated 17th July, 1878. (Solicitor for the said Official Liquidator).

SILVER-LEAD MINES, CORNWALL.

BY ORDER OF THE MORTGAGEE.

MR. MILLAR is instructed to SELL, BY AUCTION, at the Mart, Tokenhouse-yard, E.C., on Tuesday, July 23rd, at One for Two o'clock precisely, the valuable MINING PROPERTY, known as the

WHEAL AND NORTH WHEAL KINGSTON SILVER-LEAD MINES,

Situate in the Kingston Valley, near Callington, in the County of Cornwall. Together with the VALUABLE PLANT and MACHINERY.

Printed particulars and conditions of sale may be obtained at the Mines, as above; at the principal hotels at Plymouth and Tavistock; at the Auction Mart; of Messrs. RAMSDEN and AUSTIN, Solicitors, 150, Leadenhall-street, E.C.; and of the Auctioneers, 28, Old Bond-street, W., and 8, Wellington-road, N.W.

TO BE SOLD, BY PUBLIC AUCTION, under Decree of the Supreme Court of Newfoundland in Equity, in a suit between CHARLES FOX BENNETT, Plaintiff, and SMITH MCKAY and LEANDER GILL, Defendants, on Monday, the 2nd day of September next, at Twelve o'clock noon (if not previously disposed of by private sale), at the Court House, in St. John's, Newfoundland, that VALUABLE COPPER MINE and MINING PROPERTY called and known as the

UNION MINE,

Situate on the east and west sides of Tilt Cove, on the north side of Notre Dame Bay or Green Bay, Newfoundland, and near Cape John, with all ERECTIONS, IMPROVEMENTS, PLANT, and OTHER PROPERTY and EFFECTS thereto appertaining.

The mine is held under grant in fee from the Government of Newfoundland, containing two miles in length, by half a mile in breadth; a Licence of Occupation from the said Government, containing one mile square, west of and anjoining the Crown grant and land held under conveyance of fee-simple interests of former owners.

The title-deeds and documents, and plans and surveys of the property may be seen, and further information may be obtained, by application to PRESCOTT EMERSON, Esq., Q.C., Master-in-Chancery, at his office, in St. John's; or to either of the undersigned solicitors for the parties, or to either of the parties.

Conditions of sale will be published hereafter.

PRESCOTT EMERSON, Q.C., Master in Chancery,
St. John's, Newfoundland, January 23rd, 1878.

For further particulars, apply to C. T. BENNETT, Esq., No. 55, Queen's-square, Bristol; Messrs. HENRY BATH AND SON, Gresham House, London; or to PINSENT AND GREENE, Solicitors to the Plaintiff; WINTER AND CARTER, Solicitors for Defendant McKay.

TO BE SOLD, BY PRIVATE TREATY, A VALUABLE SLATE QUARRY, now producing Purple, Green, and Blue Slates, situate at NANTLLE VALE, CARNARVONSHIRE, in close proximity to a railway.

For particulars, apply to Messrs. J. and P. HIGSON, Mining Engineers, Boothstreet, Manchester.

SPAIN.

VALUABLE CONCESSIONS OF MINING PROPERTIES FOR SALE or LEASE, in the Province of Murcia, Spain, containing ZINC, ARGENTIFEROUS LEAD, and COPPER ORES, &c., situated in the Sierra de Cartagena, Sierra de Murcia, Sierra de Carrascoy, and Sierra de Espuna—all within easy distances per road and rail of the ports of Cartagena, Porman Escombreras, Mazarron, and Aguilas. Labour cheap. No expensive plant required.

Assays of surface minerals:—Copper, 21 per cent., with 23 ozs. of silver per ton; lead, 30 per cent. to 80 per cent., with from 5 ozs. to 20 ozs. of silver per ton; calamine, 30 per cent. to 49 per cent.

Further applications on application to WILLIAM PAYNTER, Mining and General Agent, Murcia. First-class references in England

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18 H.P. PORTABLE STEAM ENGINE with link motion, reversing gear, ready for delivery; also gear to wind and pump

A 9 n.p. VERTICAL STEAM ENGINE, with link motion, reversing gear (winding drum if required).

A 6-ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER, with carriage and travelling wheels.

Apply to—

BARROWS AND STEWART, ENGINEERS, BANB

TORQUAY MAIN DRAINAGE.

TO CONTRACTORS, MINING AGENTS, AND OTHERS.

PLANT AND ROCK-BORING MACHINERY FOR SALE.

THE TORQUAY LOCAL BOARD have FOR DISPOSAL, BY PRIVATE CONTRACT, several STEAM ENGINES, MORTAR MILLS, STEAM CRANE, STEAM LIFT, and CONTRACTORS' PUMPS, 50 tons of BRIDGE IRON RAILS, CAST-IRON PIPES and WROUGHT-IRON TUBING, TIP WAGONS, WHEELBARROWS, TIMBER, and a large quantity of useful CONTRACTORS' PLANT; also FOUR INGERSOLL ROCK BORING MACHINES, with the necessary air compressors and fittings.

Further particulars may be obtained on application to Mr. G. PHILLIPS, Resident Engineer, 11, Fleet-street, Torquay.

TO CAPITALISTS.

FOR £300 there is a CERTAINTY of MAKING a LARGE AMOUNT in a LEAD MINE, proved and worked. Principals only treated with.

Apply, "32," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

WINDING ENGINES, NEW PRINCIPLE, best and most compact in the market. Several pairs ready.

PORTABLE WINDING AND SINKING ENGINES, the cheapest and most convenient and durable.

STEAM CAPSTANS AND HAULING ENGINES. The greatest power in the space of any made.

HORIZONTAL, VERTICAL, AND PORTABLE ENGINES. First-class make and low price.

PUNCHING, SHEARING, DRILLING, AND OTHER MACHINES.

Many of the above secondhand, very cheap.

ALEXANDER SMITH, ENGINEER, THE MIDLAND MACHINERY STORES.—Offices: PRIOR STREET, DUDLEY.

GLASGOW AND THE HIGHLANDS.

ROYAL ROUTE VIA CRINAN AND CALEDONIAN CANALS by the new steamer "COLUMBA," or the "IONA," from GLASGOW DAILY at 7 A.M., and from GREENOCK at 9 A.M., conveying passengers for NORTH and WEST HIGHLANDS. See bill, with map and tourist fares, free, at Messrs. CHATTO and WINDUS, Publishers, 74, Piccadilly, London; or by post from DAVID HUTCHESON and Co., 119, Hope-street, Glasgow.

Mr. E. JACKSON,

Associate of the Royal School of Mines,

ANALYST AND ASSAYER.

Assays or Complete Analyses made of Copper, Silver, Lead, Zinc, Tin, and other Ores. ASSAYING TAUGHT.

106, QUEEN VICTORIA STREET, LONDON, E.C.

ENOCH AND RICHARD PARRY,

MINING AGENTS AND SURVEYORS,

MINSTERLEY, SHROPSHIRE.

Mines inspected and reported on at home and abroad.

C. H. WALKER AND CO.,

MINING AGENTS AND ENGINEERS,

VALPARAISO AND SAN IAGO,

CHILE.

HENRY SEWELL, M.E.,

318, PINE STREET, ROOM 34,

SAN FRANCISCO.

Cables will reach him by addressing—"Sewell, San Francisco."

INVESTMENTS IN CANADIAN PROPERTIES.

HERBERT C. JONES, M.A., BARRISTER AND ATTORNEY, SOLICITOR IN CHANCERY, 39, ADELAIDE STREET EAST, TORONTO, CANADA.

TO INVESTORS.

The general rate of interest on Mortgage Security, in which only one-third of the market value of improved firms is taken, is 6 to 8 per cent.

Investors furnished with the mortgage as well as if the property were in England. Interest paid regularly every half-year.

TO INVESTORS IN MINES.

The following properties dealt in:—

THE PIC COPPER COMPANY OF LAKE SUPERIOR.
THE GATLING GOLD AND SILVER COMPANY.
THE CRŒSUS SILVER MINE.

All business with Canada promptly attended to. Manitoba Lands secured.

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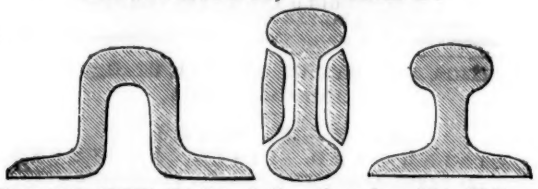

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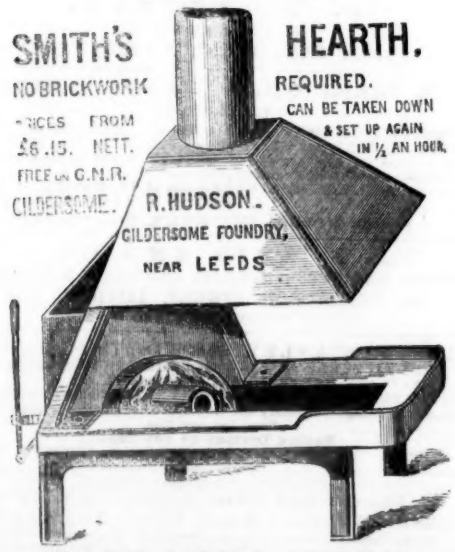

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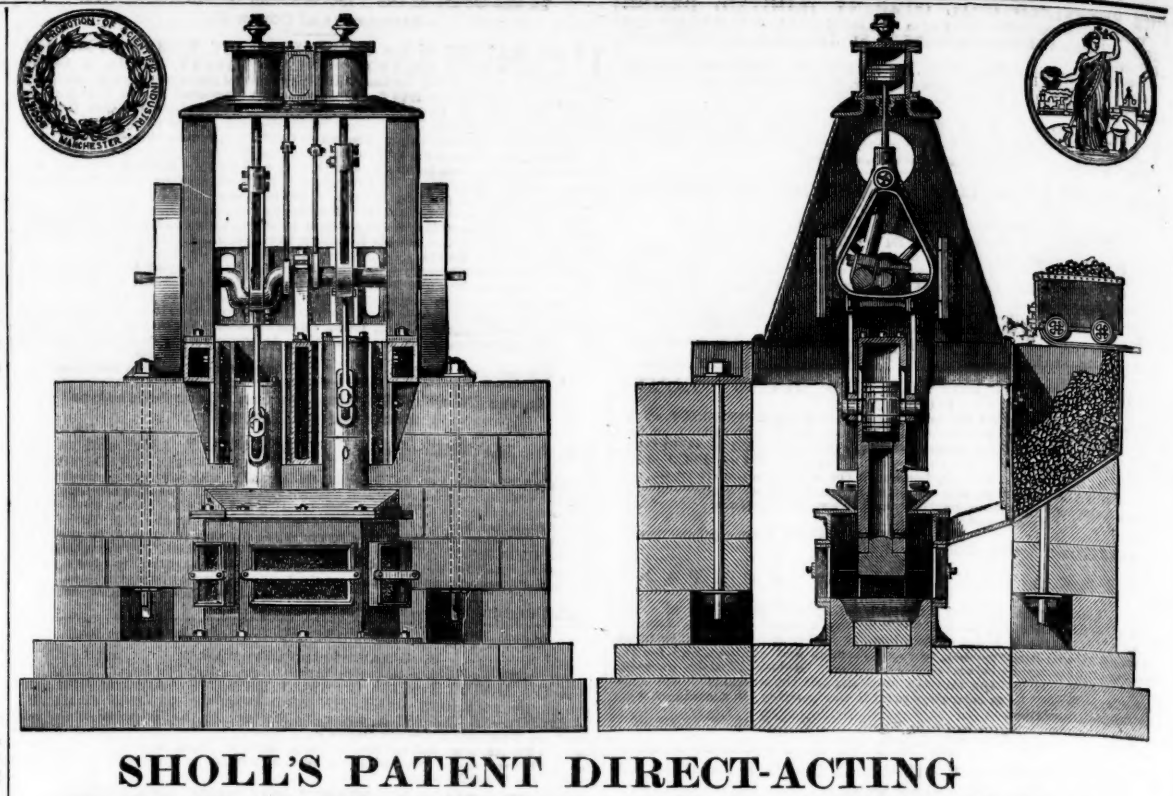

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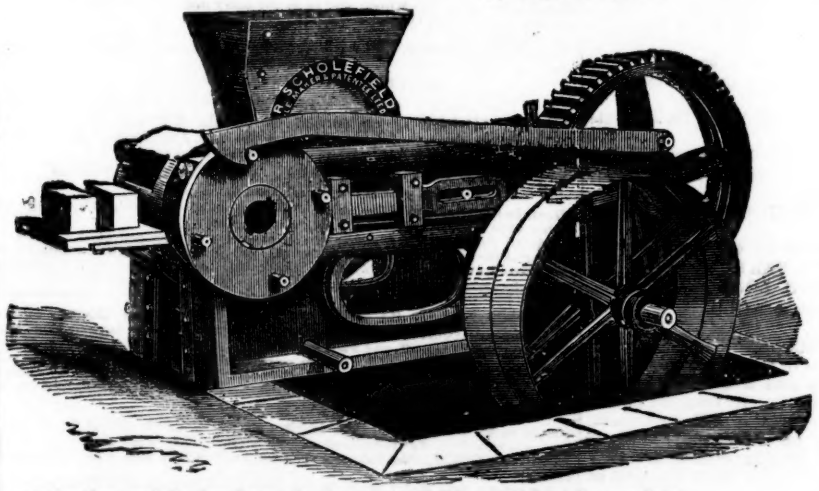

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Total cost of making 10,000 pressed bricks	£1 5 0, or 2s. 6d. per 1000.

(SETTING AND BURNING SAME PRICE AS HAND-MADE BRICKS.)

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4000	Brookwood, c, Buckfastleigh	1 16 0	... 1 ...	¾ 1 ...	3 16 0	0 2 0	Nov. 1875
2000	Bryn Alyn,* l, Denbigh	10 0 0	... — ...	...	0 7 0	0 7 0	Jan. 1877
400	Cashwell, l, Cumberland*	2 10 0	... 2¼ .. 1¾ 2¾	...	1 9 6	0 2 0	Aug. 1876
1000	Carn Brea, c, t, Illogan†§	36 7 6	... 41 ... 38 40	...	308 0 0	1 0 0	Feb. 1874
2150	Cook's Kitchen, t, Illogan†§	24 4 9	... 1 ... ¾ 1	...	11 17 0	0 7 6	Jan. 1873
10240	Devon Gt. Consols, c, Tavistock†*	1 0 0	... 3 ... 2½ 3	...	116 15 0	0 5 0	July 1877
4296	Dolcoath, c, t, Camborne	10 14 10	... 29 ... 27 29	...	112 11 3	0 5 0	June 1878
5000	East Black Craig,* l., Scotland	5 0 0	... — ...	...	0 10 0	0 10 0	Feb. 1877
...	East Darren, l, Cardiganshire	32 0 0	... — ...	...	235 10 0	1 0 0	Aug. 1876
6400	East Pool, t, c, Illogan	0 9 9	... 9½ .. 9¼ 9½	...	15 9 3	0 2 6	May 1878
40000	Glasgow Cara., c* (30,000 £1 p., 10,000 15s. p.)		... 13½ .. 1½ 1⅝	...	0 13 4	0 0 6	Feb 1878
7500	Gorsedd and Merllyn Cons., l, Flint	2 10 0	... 4½ .. 3½ 4½	...	0 5 0	0 5 0	Aug. 1877
15000	Great Dyliffe,* l, Montgom	4 0 0	... 3 ... 2 3	...	0 2 6	0 2 6	Apr. 1876
15000	Great Laxey, l, Isle of Man*	4 0 0	... 18½ 17½ 18½	...	23 19 0	0 8 0	July 1878
615	Gt. Retallack, l, bl, Perranzabuloe	5 18 6	... — ...	...	0 1 6	0 1 6	May 1878
6400	Green Hurth, l, Durham*	0 6 0	... 1 ... ⅞ 1	...	1 18 0	0 3 0	Mar. 1878
20000	Grogwinion, l, Cardigan*	2 0 0	... 3 ... 2½ 3	...	0 14 0	0 2 0	Jan. 1878
9830	Gunnislake (Clitters'), t, c	5 5 0	... 2¾ .. 2½ 2¾	...	0 13 9	0 1 0	Oct. 1876
60000	Holmbush, a, c, s-l, Callington*	1 0 0	... 1¾ .. 1½ 1¾	...	0 4 6	0 0 6	Sept. 187
2800	Isle of Man, l, Isle of Man*†	25 0 0	... — ...	...	82 5 0	0 10 0	Feb. 1876
20000	Leadhills,* l, Lanarkshire	6 0 0	... 3½ .. 3½ 3⅝	...	0 15 0	0 3 0	Mar. 1878
400	Lisburne, l, Cardiganshire	18 15 0	... 65 ... 55 65	...	586 10 0	1 0 0	May 1878
14000	Llanidloes,* l, Montgomery	3 0 0	... 1¾ ... ¾ 1¾	...	0 9 0	0 4 6	Nov. 1876
9000	Marke Valley, c, Linkinhorne	5 3 6	... 5⅛ .. ¾ ⅞	...	7 15 0	0 2 0	Jan. 1876
10000	Mellanear Copper, Hayle*	2 0 0	... 3¾ .. 3½ 3¾	...	0 5 0	0 3 0	July 1878
9000	Minera Mining Co., s, Wrexham*	5 0 0	... 14 ... 13 14	...	67 13 2	0 2 6	May 1878
20000	Mining Co. of Ireland, ci, c, l*	7 0 0	... — ...	...	93 17 6	0 2 6	Jan. 1878
444	North Busy, c, Chacewater	3 9 6	... — ...	...	1 10 0	0 1 0	July 1877
10289	North Hendre, l, Wales	2 10 0	... — ...	...	2 7 6	0 5 0	June 1878
30000	Panty Mwyn,* l, Mold (8794 iss.)	2 0 0	... 4 ... 3 4	...	0 1 0	0 1 0	Feb 187
6000	Pedn-an-drea Con., t, Redruth	0 8 6	... — ...	...	0 9 0	0 9 0	June 1877
5000	Penhalls, t, St. Agnes	3 2 6	... 1 ... ¾ 1	...	3 18 6	0 2 0	July 187
6000	Pennant, l, bar, North Wales*	5 0 0	... 5 ... 4 5	...	0 10 0	0 5 0	Mar. 1878
45793	Penstruthal,* t, c, Gwennap	2 0 0	... ⅜ .. ¾ ⅜	...	0 2 6	0 0 6	Nov. 1875
18000	Prince Patrick,* s-l, Holywell	1 0 0	... 2¾ .. 1¾ 2¼	...	0 14 0	0 1 3	Jan. 1876
10000	Red Rock,* l, Cardigan	2 0 0	... 2½ .. 2 2½	...	0 4 0	0 2 0	Jan. 1878
12000	Roman Gravels, l, Salop*	7 10 0	... 8 ... 7¾ 7¾	...	7 15 9	0 5 0	Mar. 187
512	South Caradon, c, St. Cleer	1 5 0	... 70 .. 60 70	...	742 10 0	1 0 0	Mar. 1878
6123	South Condurrow, t, c, Camborne†	6 5 6	... 11¾ 11¼ 11¾	...	3 13 0	0 8 0	Apr. 1878
12000	St. Harmon,* l, Montgom	3 0 0	... 3 ... 2 3	...	0 6 0	0 3 0	July 1877
10000	So. Fr. Patrick,* s l. (8000 sh. issued)	1 0 0	... — ...	...	0 7 0	0 1 0	Oct. 1876
14000	Tankerville, l, Salop*	6 0 0	... 3½ .. 3¼ 3½	...	4 17 0	0 5 0	Dec. 1876
6000	Tincroft, c, t, Pool, Illogan†	9 0 0	... 10½ .. 8 9	...	50 8 6	0 5 0	May 1877
15000	Van, l, Llanidloes*	4 5 0	... 21 .. 20½ 21½	...	23 0 6	0 5 0	July 1878
3000	W. Chiverton, l, Perranzabuloe†	12 10 0	... 9½ .. 8½ 9½	...	55 10 0	0 10 0	Feb. 1878
1783	West Poldice, St. Day	10 0 0	... — ...	...	1 19 0	0 4 0	July 1876
512	West Tolgus, c, Redruth	95 10 0	... 59 ... 52½ 55	...	29 15 0	1 10 0	July 1878
2048	West Wheal Frances, t, Illogan	28 1 8	... 3 ... 2½ 3	...	3 12 6	0 5 0	Oct. 1872
600	West Wheal Seton, c, Camborne†	47 0 0	... 14 ... 12 14	...	446 0 0	0 15 0	Apr. 1878
12000	West WyeValley,* l, Montgom	3 0 0	... 2½ ... 2 2⅛	...	0 12 0	0 3 0	Nov. 1877
1024	Wh. Eliza Consols t, St. Austell	18 0 0	... — ...	...	18 0 0	1 0 0	Apr. 1878
2048	Wheal Jane, t, Kea	2 13 10	... 1¼ ... 1 1¼	...	8 5 0	0 5 0	July 1878
4096	Wheal Kitty, t, St. Agnes	5 4 6	... 2 ... 1½ 2	...	11 19 6	0 2 6	Dec. 1874
25000	Wh. Newton, a, c, s, t, Calstock*	1 0 0	... — ...	...	0 8 6	0 4 0	Sept. 187
80	Wheal Owles, t, St. Just†	161 5 0	... 35 .. 30 35	...	522 10 0	4 0 0	Aug. 1872
2000	Wheal Reevor, t, Redruth	7 11 0	... 6¼ .. 6 6¼	...	0 5 0	0 5 0	Apr. 1878
6400	Wheal Prussia, t, Redruth	0 5 0	... 6¾ .. 6½ 6¾	...	0 4 0	0 1 0	July 187
10000	Wye Valley, l, Montgomery*	3 0 0	... 2 ... 1½ 2	...	0 10 6	0 4 6	Oct. 1876

FOREIGN DIVIDEND MINES.

35500	Alamillos, l, Spain*†	2 0 0	... 1½ ... 1 1½	...	1 19 3	0 1 0	April 1878
30000	Almada and Tirito Consol., s*†	1 0 0	... ½ ... ¾ ½	...	0 8 3	0 1 0	May 1876
20000	Australian, c, South Australia†	7 7 6	... 2 ... 1½ 2	...	0 19 6	0 1 6	July 1877
10000	Battle Mountain,* c, (6240 part pd.)	5 0 0	... — ...	...	0 10 0	0 10 0	Nov. 1875
15000	Birdseye Creek, g, California*	4 0 0	... ⅞ ... ⅝ ⅞	...	0 14 0	0 2 6	June 1874
20000	Cape Copper Mining,*† So. Africa	7 0 0	... 33 ... 31½ 32½	...	31 7 6	0 17 6	June 1878
34433	Cedar Creek, g, California*	5 0 0	... ⅜ .. 1½ ⅜	...	0 5 0	0 2 0	June 1878
38000	Cesena Sul. Co., Romanga, Italy*	10 0 0	... — ...	...	0 10 6	0 3 0	Aug. 1877
15000	Chicago, s, Utah*	10 0 0	... 1 ... ½ 1	...	2 8 0	0 4 0	Nov. 1876
65000	Colorado United, s-l, Colorado*†	5 0 0	... 5¼ ... 5 5½	...	0 13 6	0 4 0	Jan. 1878
10000	Copiapo, c, Chili* (£20 shares)	16 15 0	... — ...	...	7 11 5	0 3 0	May 1877
00000	Don Pedro North del Rey*†	0 16 0	... ⅝ ... ½ ¾	...	2 5 9	0 2 0	Mar. 1872
23500	Eberhardt & Aurora, s, Nevada*†	10 0 0	... 7¼ ... 6¾ 7	...	1 8 0	0 3 0	Dec. 1877
70000	English & Australian, ct S. Aust.	2 10 0	... 1½ ... 1⅜ 1½	...	2 15 9	0 1 0	Mar. 1877
30000	Flagstaff, s, Utah*	10 0 0	... ⅞ ... ⅜ ⅝	...	4 2 0	0 5 0	July 1878
25000	Fortuna, l, Spain*†	2 0 0	... 5 ... 4¼ 5¼	...	6 19 10	0 5 0	April 1878
50000	Frontino & Bolivia, g, New Gran.*†	2 0 0	... 2¼ ... 1¾ 2	...	0 1 0	0 1 0	June 1876
30000	Gold Run, hyd.	1 0 0	... — ...	...	0 2 4	0 0 4	Oct. 1873
68000	Kapunda Mining Co. Australia†	1 3 0	... — ...	...	0 2 4	0 0 6	June 1873
20000	Last Chance, s,* Utah	5 0 0	... 1⅜ .. 1 1¼	...	0 14 0	0 2 0	July 1873
15000	Linares, l, Spain*†	3 0 0	... 5½ ... 5 5½	...	17 7 10	0 5 0	April 1878
65000	London and California, g*†	2 0 0	... ⅜ ... ⅜ ⅜	...	0 1 0	0 1 0	July 1878
7837	Lusitanian, Portugal*† (£5 sh.)	3 10 0	... — ...	...	1 11 6	0 1 6	Mar. 1873
5000	Manum Copperopolis of Utah, c, s	10 0 0	... — ...	...	0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, s, Utah*	10 0 0	... — ...	...	0 4 0	0 4 0	Jan. 1873
10000	Pontgibaud, s-l, France†	20 0 0	... 29 ... 28 30	...	25 8 0	1 11 0	Nov. 1877
10000	Port Phillip, g, Clunes*†	1 0 0	... ⅝ ... ½ ⅝	...	1 10 0	0 1 0	Jan. 1878
84000	Richmond Consols, s, Nevada*†	5 0 0	... 12¾ ..12¾ 12¾	...	4 11 6	0 7 6	May 1878
40000	Santa Barbara,* g, Brazil	0 10 0	... 1⅛ ... 1 1¼	...	0 4 9	0 1 0	April 1878
120000	Scottish Australian Mining Co.*†	1 0 0	... 2 ... 1¾ 2	...	15 per cent.		May 1878
60000	Scottish Austral. Mining Co., New	0 10 0	... ⅞... ¾ ⅞	...	15 per cent.		May 1878
112500	Sierra Buttes, g, California*†	2 0 0	... 2 ... 1¾ 2	...	1 18 0	0 2 0	Oct. 1877
60000	South Aurora, s, Nevada*	5 0 0	... ¼... ⅛ ¼	...	0 14 2	0 2 0	Nov. 1873
£253000	St. John del Rey*† (£5 stock & multiples dealt in)		... 285 295	...	½ year.	17½ p. ct.	for June 1878
20000	Tolima, g, s* So. America	5 0 0	... — ...	...	0 11 6	0 6 6	May 1874
25000	Victoria (London)*, g, Australia	1 0 0	... ¾... ⅝ ¾	...	0 12 6	0 0 7½	Jan. 1878
15000	Western Andes, s,* New Granada	5 0 0	... — ...	...	0 12 0	0 12	July 1876
91000	W. Prussian (8500 pref. sh. 10l. pd)	10 0 0	... 11 ... 10½ 11	...	1 2 0	0 4 0	July 1878

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
5000	Anguilla Phosphate, West Indies (4000 issued)	10 0 0	... — ...		...Fully pd.
1 1000	Argentine, g, Argentine Republic	5 0 0	... ¾... ¾ ¾		...Fully pd.
3000	Bellavista, s, Peru* (£10 shares)	10 0 0	... — ...		...Fully pd.
30000	Blue Tent, hyd., California	5 0 0	... 3 ... 2¾ 3		...Fully pd.
249935	Chontales, g, s, Nicaragua*†	2 0 0	... ⅛ ... ⅛ ⅛		...Fully pd.
16000	Condes of Chili, s-l	5 0 0	... — ...		...Fully pd.
20000	English Australian, j, Victoria*	1 0 0	... ⅞... ⅝ ⅞		...Fully pd.
85000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	... — ...		...Dec. 1871
100000	Exchequer, g, s, California*†	1 0 0	... 2s. ... 1s. 2s.		...Fully pd.
240000	Holcombe Valley, g,* California	1 0 0	... — ...		...Fully pd.
8000	Horcachos,* s-l, Spain	10 0 0	... — ...		...Fully pd.
12000	Hultafall,* l, bl, Orebro, Sweden	5 0 0	... 16 ... 15 16		...Fully pd.
12000	Hunter Consolidated, s-l, Utah	10 0 0	... 5 ... 5		...Fully pd.
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	... — ...		...Fully pd.
00000	I. X. L., g, s, California*	1 0 0	... — ...		...Fully pd.
50000	Javali, g, Nicaragua*	2 0 0	... 9s. ... 7s. 9s.		...Fully pd.
3500	La Manche, l, Newfoundland	10 0 0	... — ...		...Fully pd.
12000	Lanestosa,* l, z, Viscaya, Spain (£2 shares)	1 15 0	... — ...		...Fully pd.
75000	Malabar, g, Colombia* (67165 issued)	1 0 0	... ¼ ... ⅛ ¼		...Mar. 1876
40000	Malpaso, g, Colombia* (7400 pref. shares, fully paid)	1 0 0	... ⅜ ... ¼ ⅜		...Fully pd.
12000	Menzenberg, c, Hounef, Germany*	5 5 0	... — ...		...Fully pd.
4588	New Bensberg, i, l, Germany	5 0 0	... — ...		...Fully pd.
66000	New Quebrada, c, Venezuela*	5 0 0	... 1⅞ ... 1⅞ 2⅛		...Nov. 1876
20000	New Zealand Kapanga, g, Coromandel*	5 0 0	... 1 ... ¾ 1		...Fully pd.
3000	Oregon,* g, Oregon, U.S. (preference shares)	4 0 0	... — ...		...Fully pd.
50000	Panulcillo, c, Chili*† (£80000 debentures)	4 0 0	... ¾... ⅝ ¾		...Fully pd.
50000	Pestarena United, g, Italy*†	3 0 0	... 6s. ... 4s. 6s.		...Fully pd.
50000	Providencia and New Rosario, s, Mexico*	1 0 0	... — ...		...Fully pd.
57000	Rica, g, Colombia* (40000 issued)	1 0 0	... ¾... ⅝ ¾		...Fully pd.
£2,1=1,000	Rio Tinto,* c, Huelva, Spain	Stock	... 67 ... 66 66		...Fully pd.
100000	Rossa Grande, g, Brazil*† (£1 shares)	0 19 0	... ⅛... ⅛		...July 1872
30040	Russia Copper, Oremburg and Ufa*†	10 0 0	... — ...		...Fully pd.
20000	San Pedro, c, Chili*	2 0 0	... ¾... ¼ ⅜		...Fully pd.
10000	Silver Plume, s, Colorado*	1 0 0	... — ...		...Fully pd.
30000	Tecoma, s, Utah*	10 0 0	... ⅝... ⅜ ⅝		...Fully pd.
43174	United Mexican, s, Mexico*†	29 0 3	... 4 ... 3¾ 4¼		...May 1878
10000	Utah, g, s-l, Utah*	5 0 0	... — ...		...Fully pd.
00000	Virneberg, c Rheinbreitbach, Germany* (£2 shares)	5 0 0	... — ...		...Jan. 1878
75000	Yorke Peninsula, s, South Australia	1 15 0	... — ...		...Fully pd.
40000	Yorke Peninsula, s, South Australia Preference	1 0 0	... ½... ¼ ½		...Fully pd.

§ Have made calls since last dividend was paid.

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

	Closing Prices	
Argentine, 1868 6 per cent.	75	76
Bolivia, 6 per cent.	27	28
Brazilian, 1865, 5 per cent.	94	96
Chilian, 1866, 7 per cent.	100	102
City of Providence, 5 p.c. coupon bnds	101	103
Egyptian, Gov preference	73	73½
Do., unified debt, scrip	75	75½
Do., 7 per cent., V.M.L.	78	80
Do., per cent. guar.	83	85
Do., K. Daira Sanieh	52	53
Foreign and Col. Gov. Trust, 6 p. ct.	75	80
Do., 5 per cent., 2d issue	65	67 xd
Do., 6 per cent., 3d issue	63	68
Do., 1872, 4th issue	60	65
Do., 1873, 5th issue	55	60
Peruvian, 1870, 6 per cent.	15	15⅛
Do., 1872, 5 per cent.	13	13½
Russian, 5½ per cent. L. Mort.	—	—
Spanish, Quicksilver Mort., 5 p. ct.	97	99
United States Mort., 6 per cent.	98	100

NON-DIVIDEND MINES.

Shares.		Paid.	Last wk.	Clos. pr.
40000	Aberdaunant, l, Llanidloes*	1 0 0	... ⅜ .. ¾ ⅞	
2560	Aberllyn,* l, bl, Carnarvon	10 0 0	... 11 ... 10 11	
10000	Aberystwith, s ... Cardigan	5 0 0	... — ...	
80	Albion, i, Cornwall	100 0 0	... — ...	
7800	Alvig. & Burng.,*t, St. Aust.	3 0 0	... 1¾...1⅝ 1¾	
12000	Assneton, ., Carnarvonshire*	5 0 0	... 1 ... ¾ 1	
50000	Ballycummisk,* c, Schull	2 0 0	... — ...	
12000	Bedford Unit.,* c, Tavist. (1l. liab.)	0 1 0	... ¼ .. ⅛ ¼	
30000	Bettws y-Coed,* l (20,000 issued)	1 0 0	... 1⅛... 1 1⅛	
800	Blaen Caelan,* l, Cardigan	3 0 0	... 4½...4½ 4¾	
3937	Sine Hills, t, c, St. Agnes	3 12 6	... ¾ .. ½ ¾	
30000	Bôdidris,* l, bl, Denbighshire	1 0 0	... 1⅜...1⅜ 1⅜	
1000	Bollihope Vale,* s-l, Durham	5 0 0	... — ...	
200	Botallack, t, c, St. Just†	123 15 0	... — ...	
2000	Bowden Hill,* ma	1 0 0	... — ...	
6000	Bradwell Moss Rake	1 0 0	... 1 ... ⅜ 1	
256	Browngelly, c, St. Neot	2 0 0	... 2⅜ .. 2¼ 2⅜	
50000	Cambrian,* s-l, c, Cardiganshire	2 0 0	... 3½ .. 3¼ 3½	
3348	Cargoll, s-l, Newlyn†	7 4 0	... ⅜ .. ¼ ⅜	
10000	Caron, l, Cardigan*	2 0 0	... 2¾... 2 2½	
20000	Central Foxdale, l, I. of Man* (2l. sh.)	1 5 0	... — ...	
10000	Central Van,* l, bl, Llanidloes	5 0 0	... — ...	
5120	Clementina, l, Llanrwst*	1 0 0	... 1⅝... 1⅜ 1⅝	
7500	Combellack,* t, Wendron	2 0 0	... — ...	
6000	Combmartin, s-l, North Devon	0 7 0	... ⅛... ⅛	
24 00	Court Grange, s-l, Cardiganshire	1 0 0	... 1⅛... 1 1⅛	
20000	Cwm Dwyfor, c, s-l, Carnarvonsh	1 0 0	... — ...	
3000	Cwmystwith (New) [5l. shares]	4 0 0	... — ...	
1 80	D'Eresby Cons., l, bl, Carnarvon	10 0 0	... 11 ... 10 11	
512	D'Eresby Mountain, l, bl, Llanrwst	20 0 0	... 90 ... 80 90	
2 0000	Denbighshire Consolidated, l*	3 0 0	... 1½ .. 1 1⅛	
12000	Derwent,* l, Durham	4 0 0	... 2 ... 1½ 2	
10000	Dubby Syke, l, Durham*	0 15 0	7s. ... ⅛	
6144	East Caradon, c, St. Cleer†	2 19 0	... ⅛ .. ⅛ ⅛	
4000	East Chiverton, i, Perranzabuloe	7 1 0	... 3 ... 2¼ 3	
3000	East Craven Moor*, l, Pateley Bdge	10 0 0	... 10 ...	
600	East Goginan, l, Cardigan	2 0 0	... — ...	
8000	East Van, s, Llanidloes*	5 0 0	... 4¼ .. 3¾ 4¼	
1722	East Wh. Lovell, t, Helston	9 1 0	... ⅛... ⅛ ⅛	
20000	Elgar,* s-l, Cardiganshire	1 0 0	... ⅝... ⅜ ⅝	
8000	Fronvellan, l, Mont.* [4000 sh. fy. pd.]	1 0 0	... — ...	
3950	Gawton, c, Tavistock	4 5 6	... ⅜... ⅛ ⅜	
12000	Glan Clwyd,* l, Gwyddelwern	1 0 0	... — ...	
14000	Glenroy,* s-l, Isle of Man	4 5 0	... ⅞ .. ⅝ ¾	
10000	Glyn,* l, Llanidloes	2 0 0	... ¾... ⅛ ⅜	
12000	Goginan, & Level Newydd, Card., l	2 10 0	... — ...	
100000	Gold, g, Merionethshire	1 0 0	... — ...	
40000	Goren,* s-l, Carmarthen	1 0 0	... 1 ... ¾ 1	
20000	Gt. E. Foxdale, l, I. of Man (1l. sh)	0 18 0	... — ...	
12000	Great Holway,* l, Flintshire	5 0 0	... 5¾... 5 5¾	
9500	Great Pant-y-Pydew, l, Holywell	2 0 0	... — ...	
6000	Gt. Wheal Eleanor, t, North Bovey	1 17 6	... 2 ... 1¾ 2	
6000	Great Wheal Rodd,* s-l, Cornwall	0 10 0	... 1 ... ¾ 1	
10000	Harehope Gill,* t, Durham (£1 sh.)	0 5 0	... — ...	
600	Hartington Moor,* carb. l, Derby	1 0 0	... 2½... 1½ 2	
6400	Harwood,* l, Durham	0 15 0	5s. ... 4s. 6s.	
1024	Herodsfoot, l, near Liskeard	8 10 0	... 4½... 4 4½	
18000	Hingston Down, c, Calstock*†	0 6 0	... ⅜... ¼ ⅜	
5000	Hush Elstedsfod Minera,* l	2 0 0	... — ...	
200	Islay,* l, Scotland	28 0 0	... — ...	
2500	Killaloe, sl, Tipperary†	1 0 0	... — ...	
6000	Killifreth, t, Chacewater	2 3 6	... ¾... ⅝ ¾	
25000	Kingston Con., s-l, Stoke Climsland.	1 0 0	... — ...	
	Ditto, preference	1 0 0	... 1½... 1 1⅛	
12000	Ladywell,* l, Salop	2 10 0	... 1 ... ¾ 1	
12000	Ditto, 10 per cent. pref., 1l. each	0 10 0	... ⅝... ⅜ ⅝	
2500	Levant, c, t, St. Just	9 18 6	... — ...	
6000	Livingstone Consols, t, St. Agnes	0 10 0	... 1 ... ¾ 1	
5120	Lovell, t, Wendron	0 16 0	... 2 ... 1½ 2	
25000	Llanrhaiadr, l, Montgomery*	2 0 0	... — ...	
30000	Llanrwst,* l, Carnarvon	2 0 0	... 4¼ .. 4 4¼	
24	Mawston,* l, South Wales	50 0 0	... 60 ... 50 60	
6000	Medlyn Moor, t, Wendron	1 17 4	... — ...	
11000	Mwyn Yw ... Cardigan*	3 0 0	... 1¼ .. ¾ 1¼	
7000	Mid Devon Copper*	0 6 8	... 1¼ .. 1 1¼	
21000	Ditto	0 2 6	... 1 ... ¾ 1	
8000	Mineral Corp. of Great Britain*	10 0 0	... 10 ... 10 12	
11000	Monydd Gorddu, l, Cardigan* (Red.)	5 0 0	... 2 ... 1½ 2	
12000	Morfa Du, z, g, s, Anglesea	0 12 6	... ¾... ⅝ ¾	
25000	Nant-y-Ronen, s-l, Cardigan*	1 0 0	... — ...	
15000	Nascent Copper*	1 0 0	... — ...	
4768	New Bronfloyd,* ., Cardigan (5l. sh.)	3 16 0	... 4½... 4½ 4½	
8000	New Dolcoath, t, c, Camborne*	3 0 0	... 1¼... 1⅛ 1¼	
20000	New East Foxdale, s-l, Isle of Man.	0 18 0	... — ...	
16000	New Fowey Consols, t, St. Blazey*	3 0 0	... 2 ... 1½ 2	
1492	New Hendra, t, Breage	3 9 0	... — ...	
3200	New South Merllyn, l, Flint*	2 10 0	... 1 ... ¾ 1	
3500	New Tincroft,* t, Lelant	0 0 0	... 3 ... 2½ 3	
5000	New Wheal Emma, c, Buckfastleigh	2 0 0	... — ...	
4000	North Cornwall,* l, Cornwall	5 0 0	... 5⅜ ..5⅛ 5⅜	
30000	North Laxey,* Isle of Man	1 0 0	4s. ... 2s. 4s.	
2000	North Levant, t, c, St. Just†	12 8 0	... 1 ... ¾ 1	
20000	North Prince Patrick,* l, Holywell	1 0 0	... — ...	
5936	North Treskerby, c, St. Agnes	5 17 10	... — ...	
2000	North Wheal Towan, l, Flint*	2 10 0	... — ...	
6400	Oola Hills,* s-l, Limerick	5 0 0	... — ...	
12000	Pandora,* l, Carnarvon	2 0 0	... ¾ ... ⅝ ¾	
6000	Park Valley,* s-l, North Devon	0 4 0	... 1 ... ¾ 1	
6000	Parracombe, s-l, Devon	0 5 0	... ⅝... ½ ⅝	
16023	Parys Mountain,* c, Anglesea	3 0 0	... ⅛... ⅜ ⅛	
12000	Phœnix, & W. Phœnix, t, c, Link.	5 7 3	... 5 ... 4½ 5	
4000	Pateley Bridge, l, Yorkshire	5 0 0	... 1 ... 1¾ 1¾	
7000	Pioton,* s-l, Holywell, fully paid	1 0 0	... 4 ... 4 5	
12000	Pyrallimmon, l, Llanidloes*	2 0 0	6s. ... 4s. 6s.	
10000	Port Nigel,* s-l, Carnarvonshire	2 0 0	... ⅛... ¼ ⅜	
2000	Prideaux Wood, t, Llanivery	5 0 0	... — ...	
5182	Prince of Wales, c, Calstock†	2 6 0	2s. ... 1s. 2s.	
6000	Relistian Consols, c, Gwinear	0 10 0	... ⅛... ½ ⅝	
15000	Rookhope, l, Durham*	1 10 0	... 1 ... ⅞ 1	
5000	Silvercross,* c, t, Marazion	1 0 0	... — ...	
4200	Snowbrook, s-l, Montgomery	5 0 0	... — ...	
000	So. Cwmystwith, l, Cardiganshire.	2 0 0	... 3 ... 2 3	
2000	South Darren, l, Cardigan*	1 10 0	... 2¼ .. 2 2¼	
30000	South de Eresby Mountain, l	1 0 0	... 1⅝ .. 1¾ 2	
512	South Dolcoath, c, t, Redruth	12 5 0	... 1⅜... 1 1⅜	
5000	So. Molton Cons., s-l, No. Devon	0 3 6	... 1 ... ¾ 1	
18000	South Roman Gravels, l*	1 10 0	... ⅛... ⅛ ⅛	
6000	South Roskear, t, c, Camborne	7 5 0	... — ...	
6000	South Tolcarne, t, c, Camborne	2 11 6	... ¼ .. ¼ ¼	
937	South Wheal Crofty, c, Illogan	40 0 10	8 ... 6 7	
4500	South Wh. Frances, c, Illogan†	7 12 4	... 3 ... 2¾ 3	
6000	St. Lawrence, Amal., l, Flintshire*	2 0 0	... — ...	
10000	St. Patrick, l, Halkin, Holywell*	1 0 0	... 1¼ .. 1 1¼	
6000	Success, &c., l, Derb. (12,000 l. called)	1 0 0	... — ...	
16000	Sunnyside,* l, Durham	2 0 0	... 2½ .. 2 2½	
30000	Talybont, s-l, Cardiganshire	1 0 0	... 1¾ .. 1 1¾	
2400	Teesdale,* l, Durham	1 0 0	... ½ ... ⅜ ½	
14000	Teigu Valley, l, bar., Bridford	1 0 0	... — ...	
10000	Temple, l, Cardigan*	1 0 0	... 5¼ .. 5½ 5¾	
10000	T